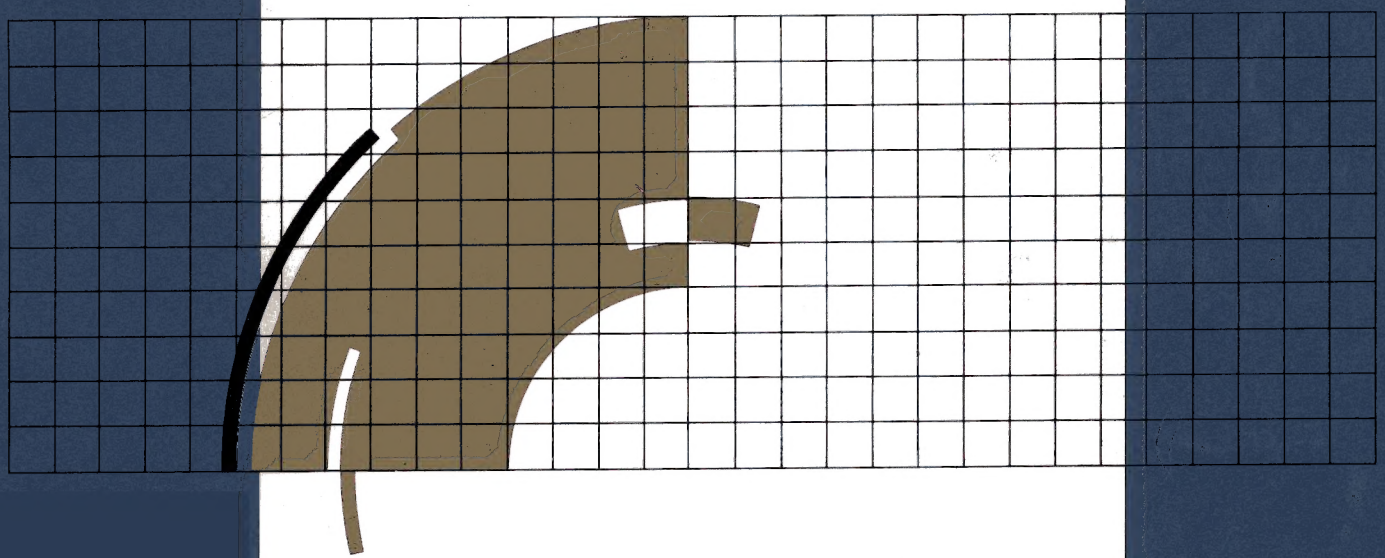
OPERATION MANUAL

MOD.700/600



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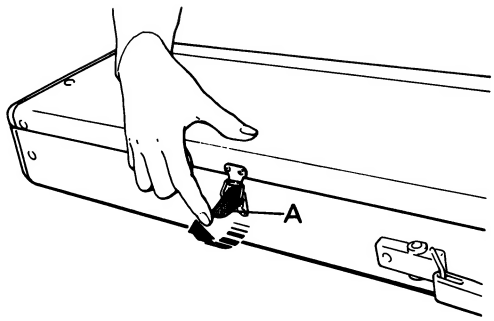
(The Lace Carriage is an optional purchase)

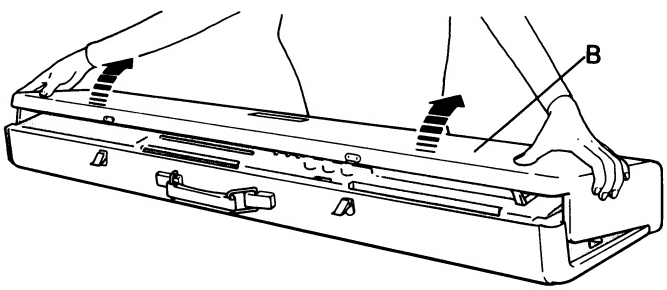
MACHINE AND ACCESSORIES



Machine

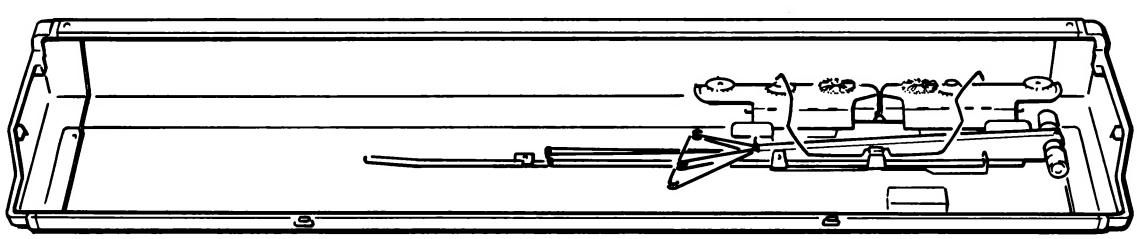
Place the Knitter on the table with Carrying Handle away from you.

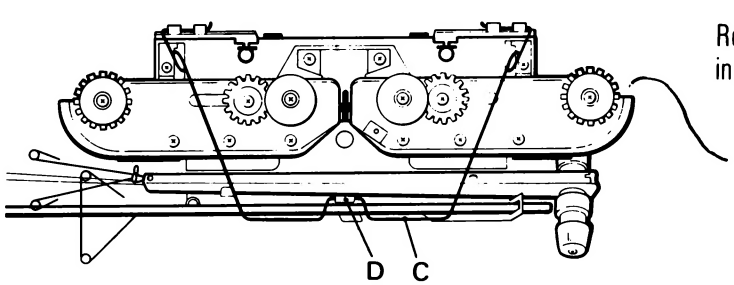
Unfasten the Latches "A".



Lift the Top Cover "B" slightly pull it towards you and remove it from the knitter.

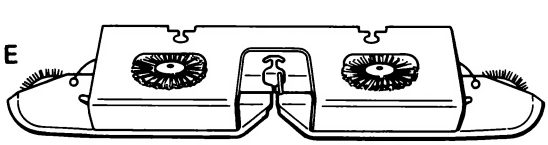
Place the Top Cover as shown below.

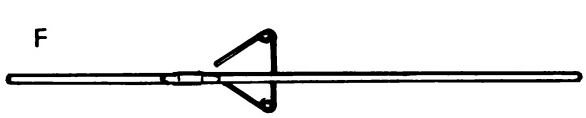


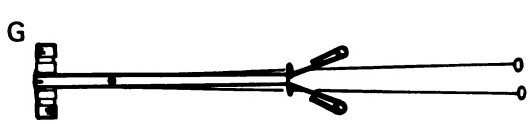


Release the wire spring "C" from holding bracket "D" located inside the Top cover.

Nylon Brush Wheel
#KM20774

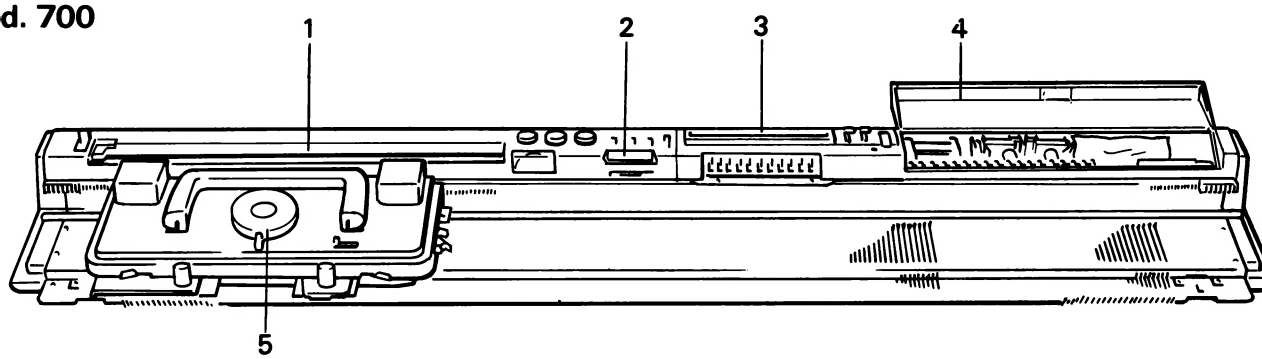


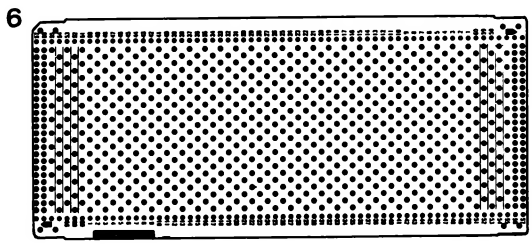


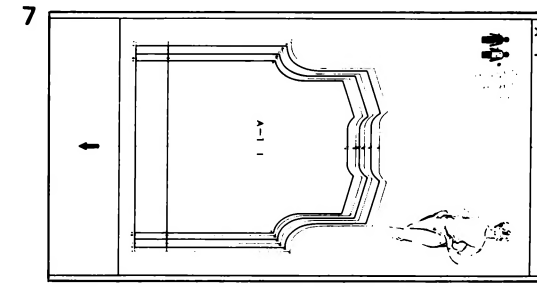


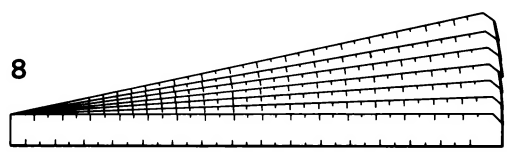
E — Arm
F — Yarn Rod.
G — Auto Tension

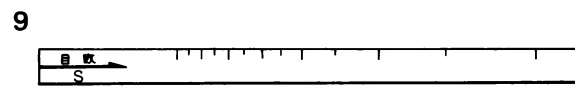
Mod. 700







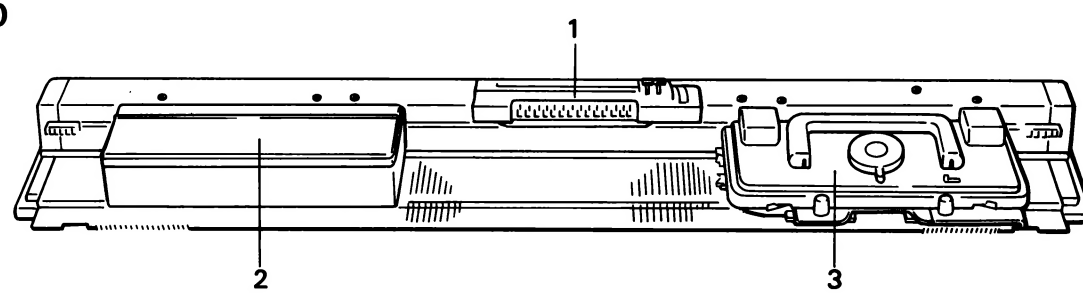


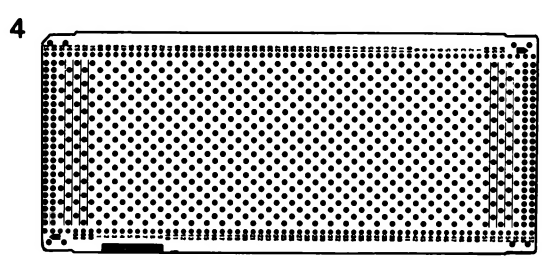


1. Knit Contour (Radar)
2. Row Counter
3. Pattern Panel
4. Accessory Box
5. Carriage
6. Punch Card (20)
   Intarsia Card
7. Pattern Paper (20)
8. Stitch Scale (H8 — H14)
9. Gauge Scale

* Operation Manual
* Knitting Manual
* Pattern Book

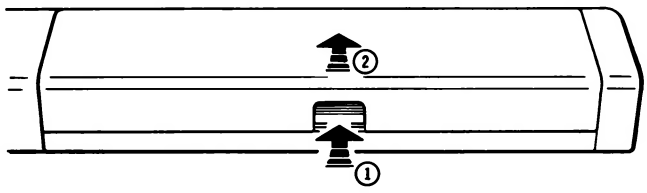
Mod. 600





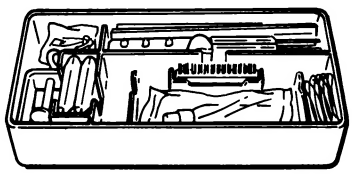
1. Pattern Panel
2. Accessory Box
3. Carriage
4. Punch Card (20)
   Intarsia Card

* Operation Manual
* Knitting Manual
* Pattern Book



Accessory Box

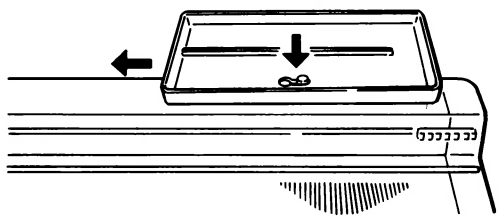
Mod. 700 — buit-in accessory box.
Lift the lid to open the box.



Mod. 600

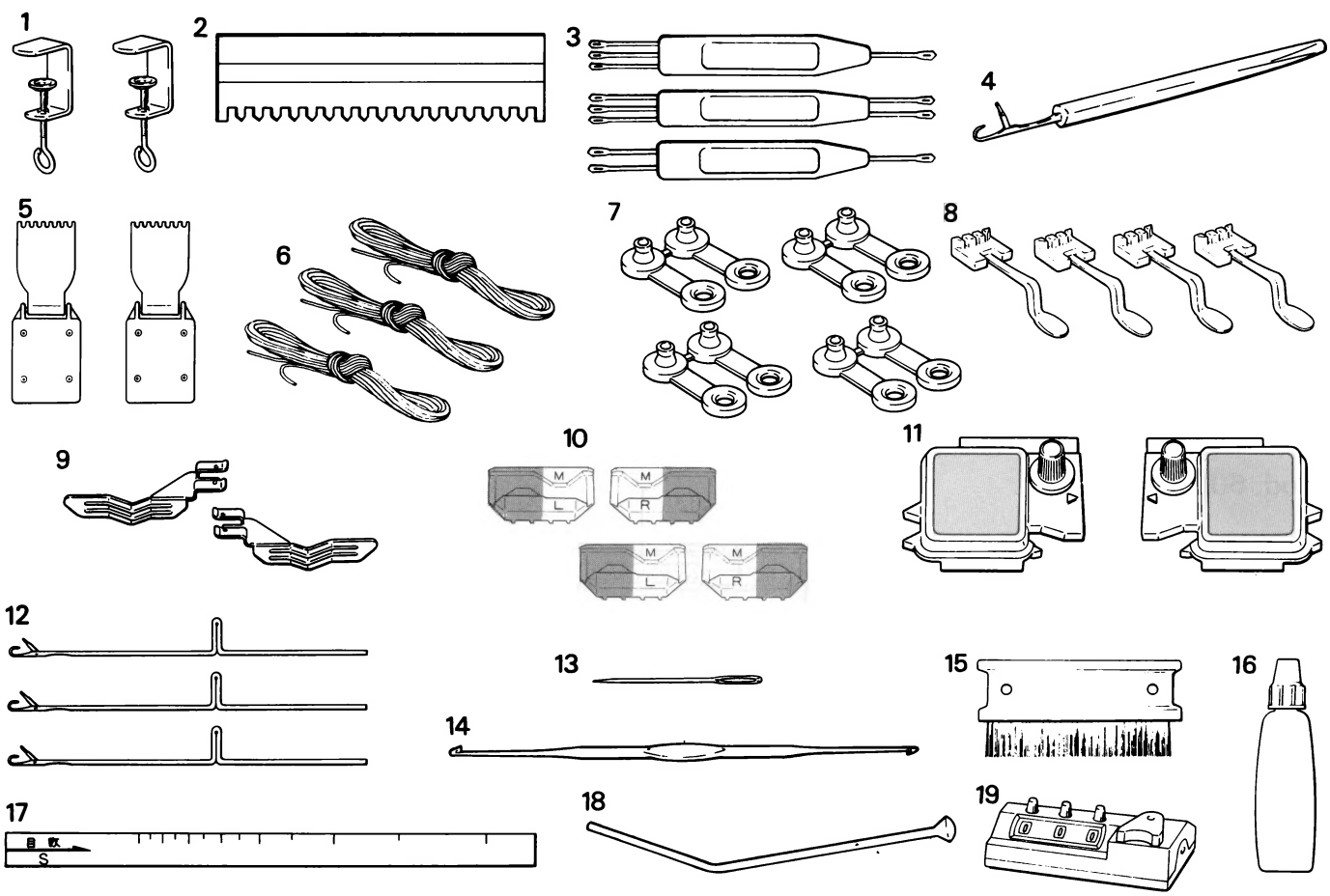
Remove the box from the Needle Bed and open the lid.

Use the lid as an accessory tray by fitting it into the pin on the right side of casement.



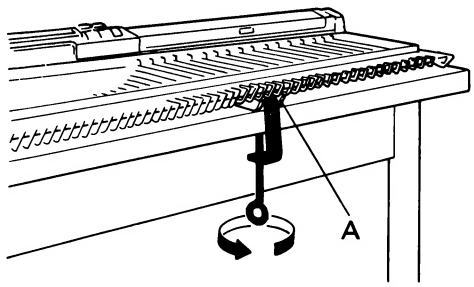
The following are packed in both accessory boxes.

Mod. 700 contains No.17 with Stitch Scale Set and No.18 & No.19 are exclusive for use with Mod. 600.



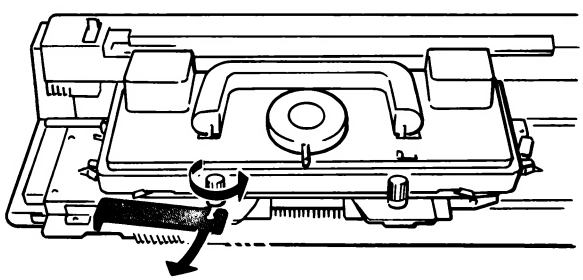
1. Clamp (2)
2. Needle Pusher 0—1/1
3. Transfer Tool
   1 — 3
   2 — 3
   1 — 2
4. Tappet Tool
5. Claw Weight (2)
6. Ravel Cord (3)
7. Card Snap (4)
8. Yarn Separator (4)
9. Latch Guide (R)/(L)
10. Point Cam (R)/(L)
11. Magic Cam (R)/(L)
12. Latch Needle (3)
13. Tapestry Needle
14. Crochet Hook
15. Cleaning Brush
16. Oil
17. Gauge Scale
18. Card Guide
19. Row Counter

SETTING UP THE KNITTER



Insert the Clamps into the Slots "A" at the bottom of Needle Bed.

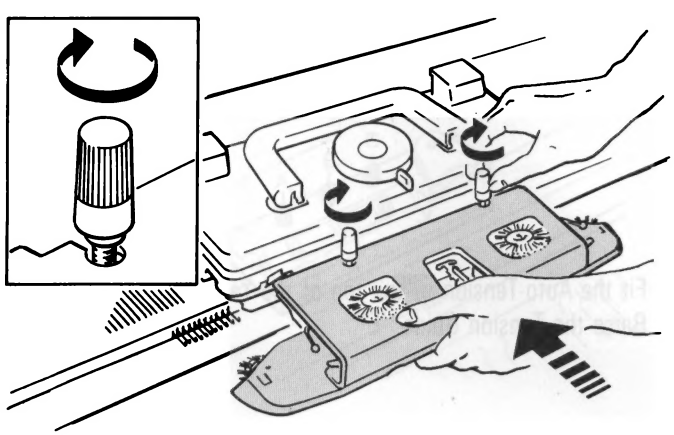
Fasten the Clamps by turning in the arrowed direction.



Loosen both Arm Nuts by turning them in the arrowed direction. Remove the Carriage Fastener.

Mod. 700 Carriage is located at left side of the Needle Bed and Mod. 600 is at right side.

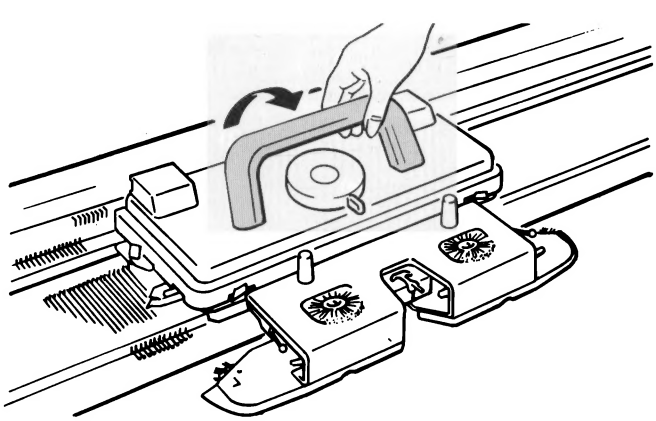
Keep the Carriage Fastener in the accessory box. Use it to keep the Carriage in place whilst moving the machine.



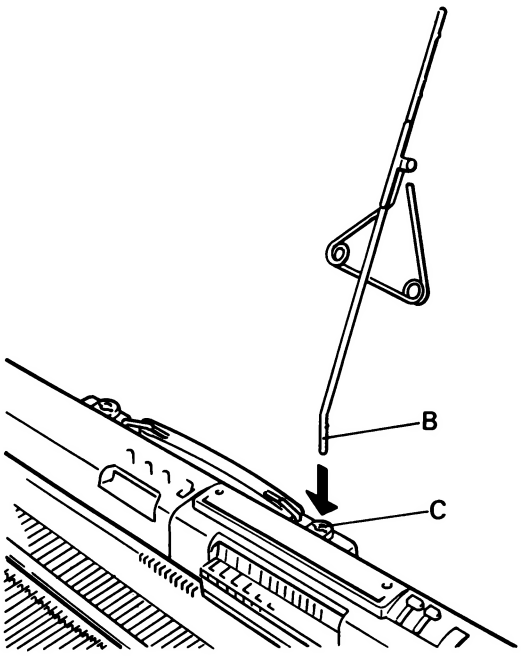
Remove the Arm from the Top Cover and position it under the two Arm Nut screws.

Hold the Arm securely against the Carriage, and tighten the Arm Nuts by turning them in the arrowed direction.

Ensure that the Arm Nuts fit properly into the cut-out of the Arm.

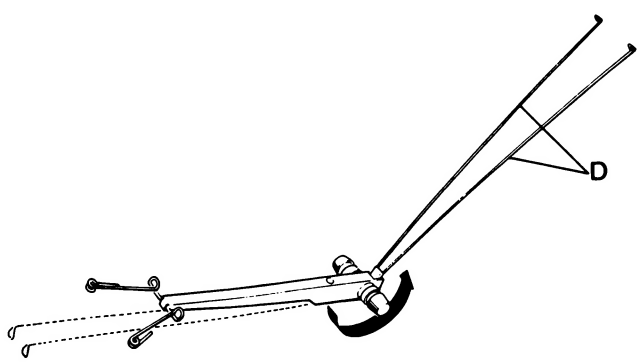


Raise the Carriage Handle until it click into position.

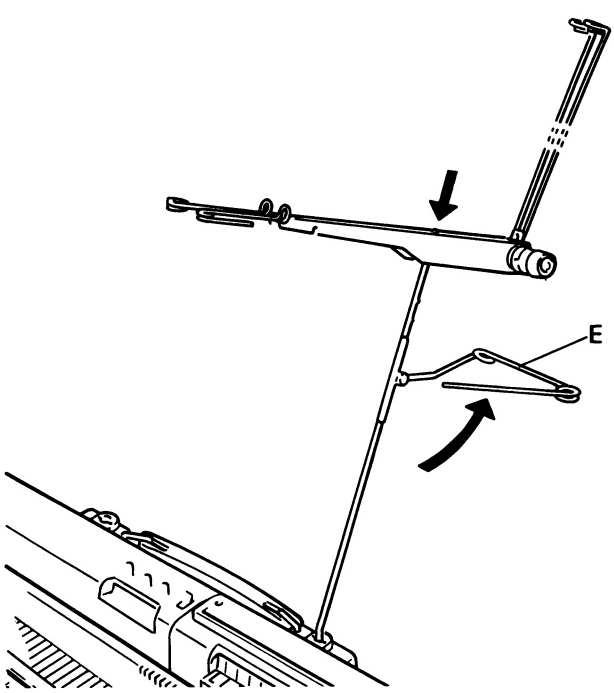


Remove the Auto Tension and Yarn Rod from the inside of the Top Cover.

Insert the short bent end of the Yarn Rod "B" into the right side of the Handle Bracket Socket "C".

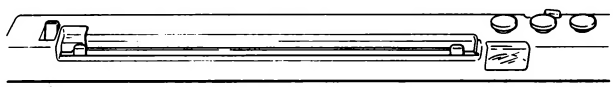


Turn the Tension Springs "D" until they click into position.

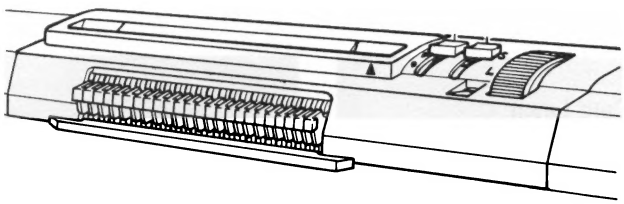


Fit the Auto-Tension to the top of the Yarn Rod.
Raise the Tension Guide "E".

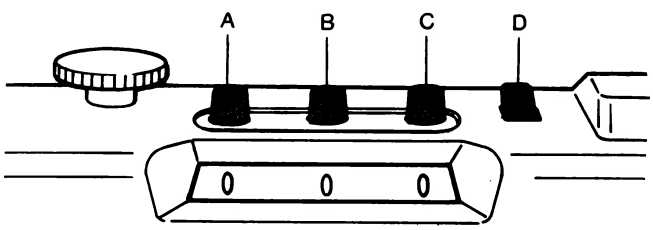
NAMES AND FUNCTIONS OF EACH PARTS



Knit Contour — Mod. 700 (See Knitting Manual)

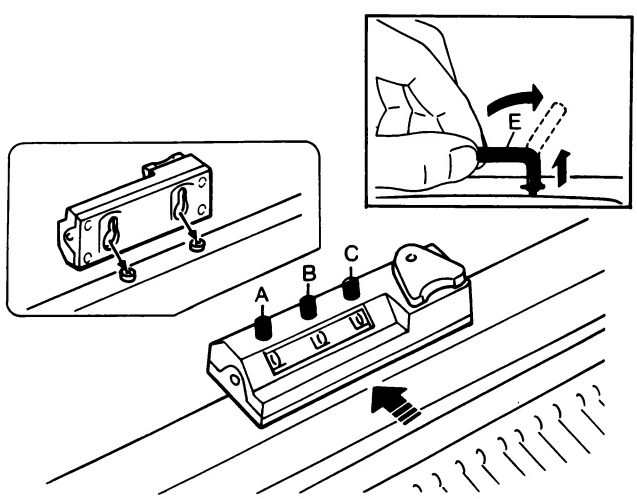


Pattern Panel (See page 20)



Row Counter

To reset number, turn the knurled knobs "A", "B" and "C" in either direction.

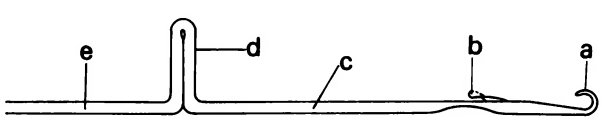


Mod. 700

"D" — Row Counter Lever
▼ — Operating position
● — Locked position

Mod. 600

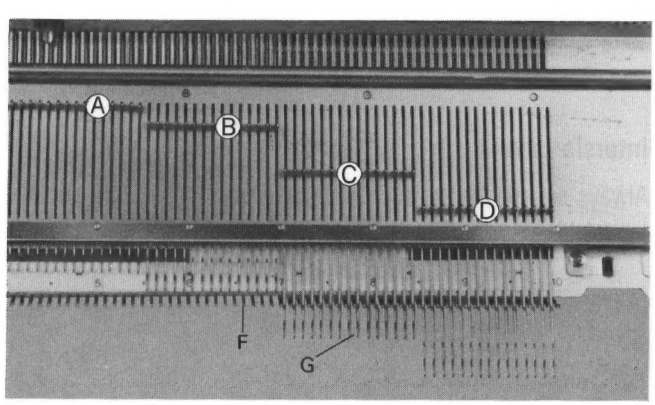
"E" — Row Counter Tripper on the left back of the Carriage
To engage the Row Counter Tripper with the row Counter, lift and point it towards the Row Counter.
To disengage, lift and turn it to the side.



Needle Bed and Needle Positions

"F" — Sinker Post
"G" — Latch Needle

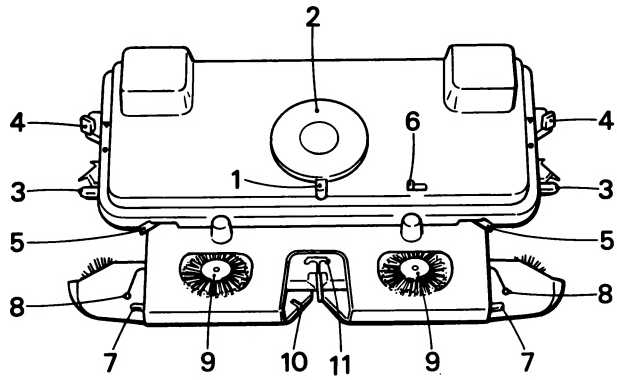
a — hook
b — latch
c — stem
d — butt
e — shank



On both ends of Needle Bed are bracketed lettres A, B, C and D. Align the needle butts inside the brackets.

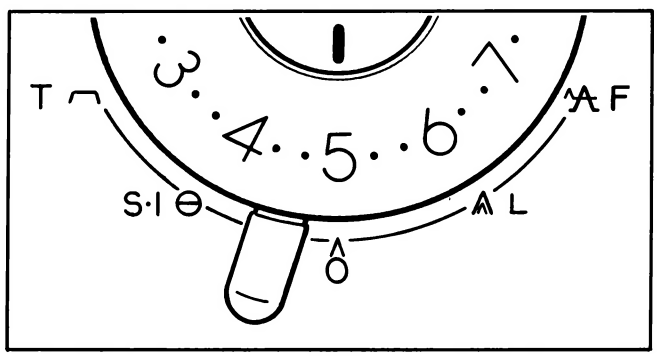
A — Needles do not knit.
B — Needles knit Stockinet and stitch patterns.
C — Needles knit Stockinet only.
D — Needles do not knit with Russel Levers at **I**.
Needles are knitted back to B position with Russel Levers at **II**.

The numbers 0 — 10 on the left and right side of centre(0) indicate number of needles.



Carriage and Arm

1. Cam Lever
2. Stitch Dial
3. Intarsia Levers
4. Side Levers
5. Russel Levers
6. Release Lever
7. Weaving Knobs
8. Weaving Yarn Holders
9. Weaving Brushes
10. Yarn Cutter
11. Yarn Feeders

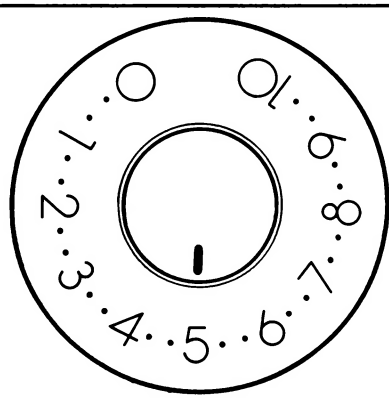


Cam Lever

Use this to select stitch type.

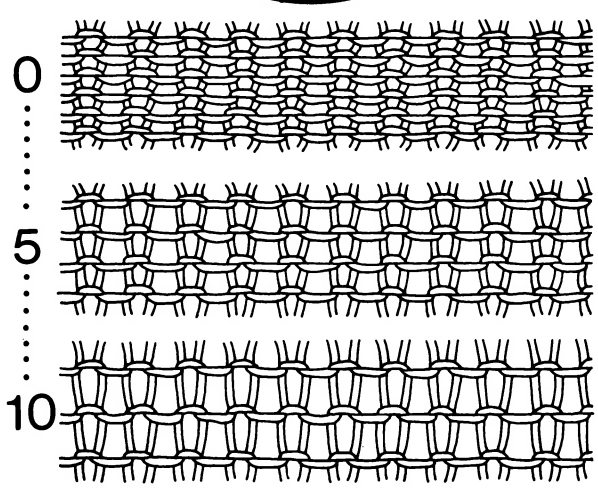
Five positions are marked as shown opposite, and each position is selected by setting the Cam Lever to the selected stitch type.

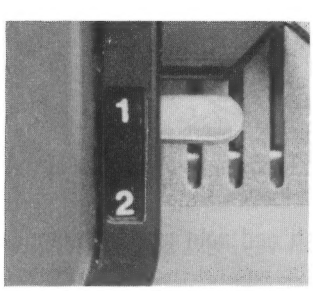
∧/O — STOCKINET, WEAVING, CAST-ON
Θ/S, I — SLIP STITCH, INTARSIA
⌐¬/T — TUCK STITCH
⩓/L — PUNCH LACE
⩙/F — FAIR ISLE (KNIT-IN)

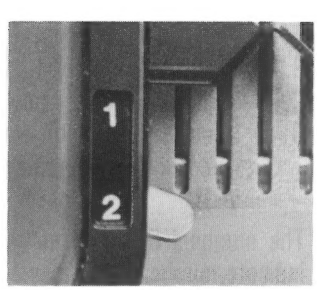


Stitch Dial

Use this to control the size of stitches.
Set the number to the I mark.
The higher the number on the Stitch Dial, the larger the stitch size. (the fabirc is loose) The lower the number, the smaller the stitch. (the fabric is tight)







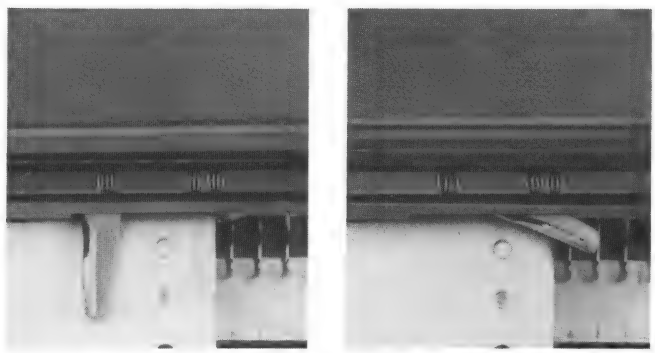
Intarsia Levers

Always set the Levers to "1", unless knitting Intarsia, set the Levers to "2".

Side Levers

These control needles in B position.

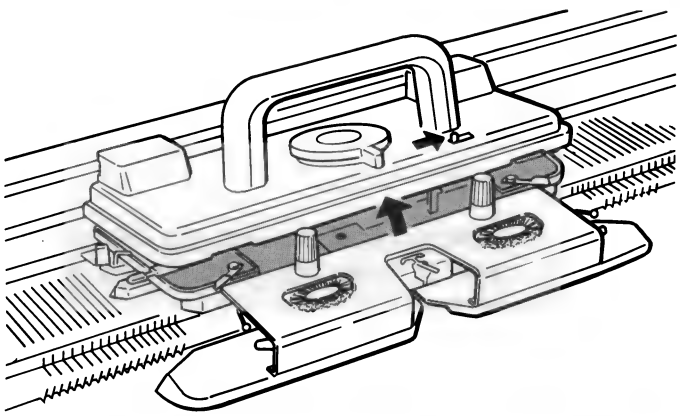
●..... Needle knit Stockinet only.
▼.....Set to this position to knit patterns using a Punch Card.



Russel Levers

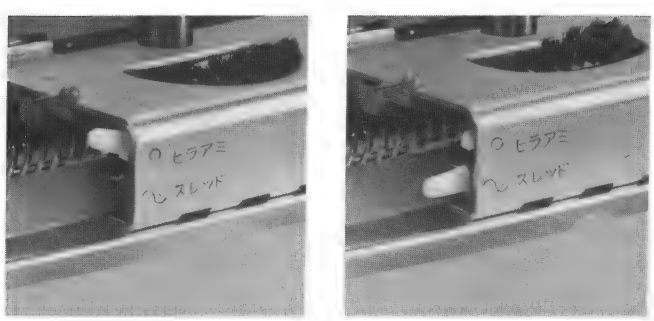
These control needles in D position.

I..... Do not knit the needles in D position.
II..... Knit the needles in D position in Stockinet.



Release Lever

By using this lever, you can release Carriage from a jam as well as move it across the bed without knitting.

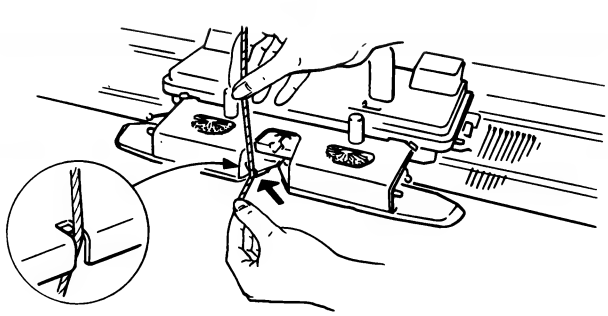


Weaving Knobs

Move this knob to position the Weaving Brush.

○..... Set to this position except for weaving
≈..... Set to this position for cast-on and weaving.

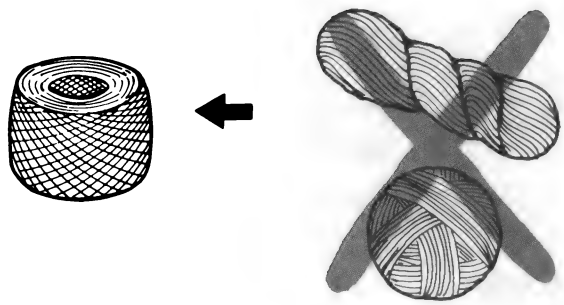
To set the Weaving Knob to ≈, push it slightly forward, it will drop into position.



Yarn Cutter

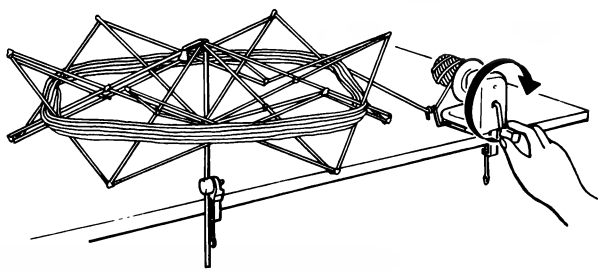
Use this to cut the knitting yarn.
Hold the yarn with both of hands and press the yarn against the cutter.

YARN PREPARATION



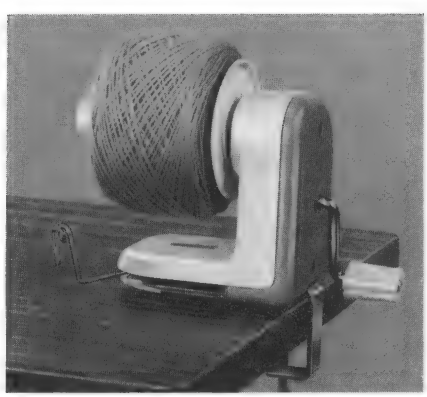
Your machine is designed to knit a wide variety of yarns from cotton thread to thick yarn, but it is recommeded to use medium 4-Ply yarn for practice.

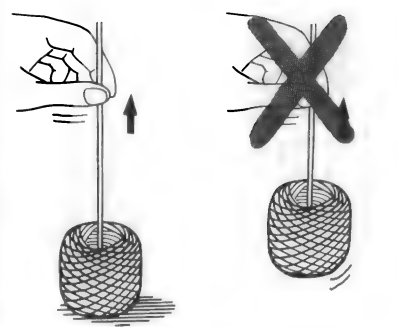
Correct preparation of yarns before you start knitting is very important.
This will make knitting more enjoyable and easier. The quality of your garment will be much improved.



It is impossible to knit from a hank of yarn or hand wound ball.

Open the hank of yarn and place it on your arms (or optional Skein Holder) to wind it into a ball, suitable for machine knitting.

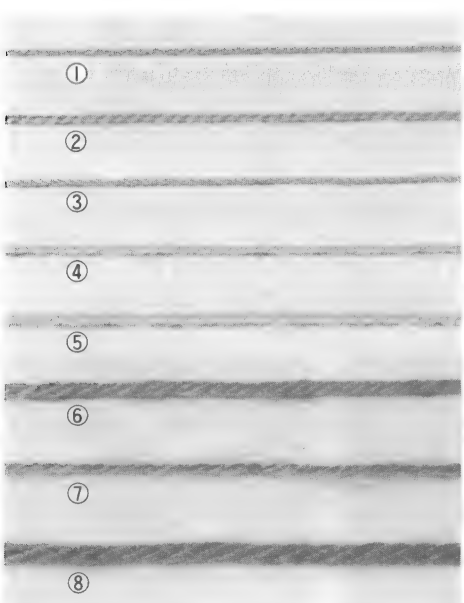




An optional Yarn Ball Winder is recommended for winding yarn.

When yarn is rewound, ensure that the yarn end comes out freely without lifting the ball.

If the ball has been wound too tight for the yarn to come out freely, rewind more loosely.



YARN AND STITCH DIAL

To obtain suitable stitch size or suitable tension for a garment, set the Stitch Dial Number according to the thickness of the yarn, referring to the yarns and table opposite.

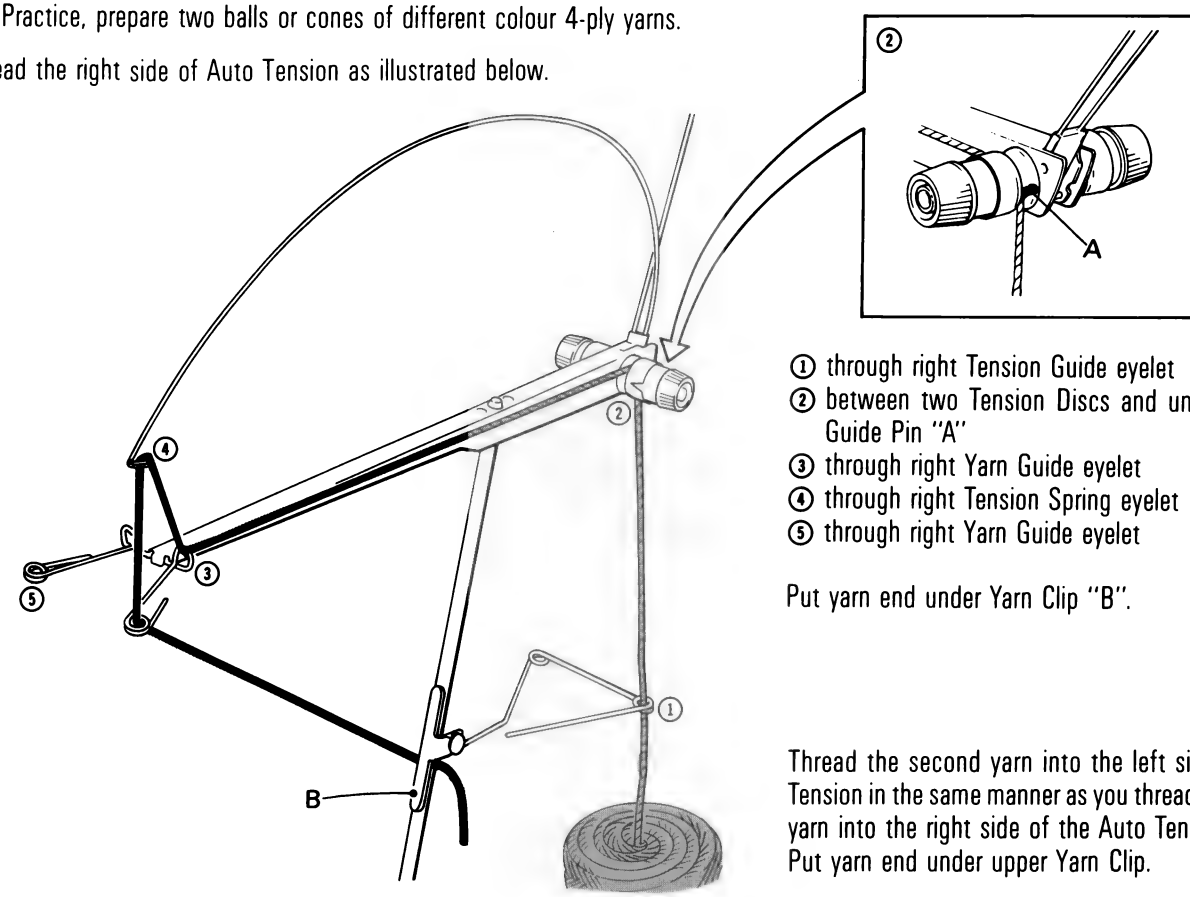
The thicker the yarn, the higher the Stitch Dial Number, and the thinner the yarn, the lower the Stitch Dial Number.

TYPE OF YARN	STITCH DIAL
① Cotton thread	2 ~ 3
② Thin yarn (2-ply)	2 ~ 3
③ Summer yarn	3 ~ 4
④ Light yarn (3-ply)	3 ~ 5
⑤ Medium yarn (4-ply)	4 ~ 6
⑥ Thick yarn	6 ~ 9
⑦ Mohair (every second needle)	8 ~ 10
⑧ Very thick yarn (every second needle)	6 ~ 9

THREADING THE YARNS

For Practice, prepare two balls or cones of different colour 4-ply yarns.

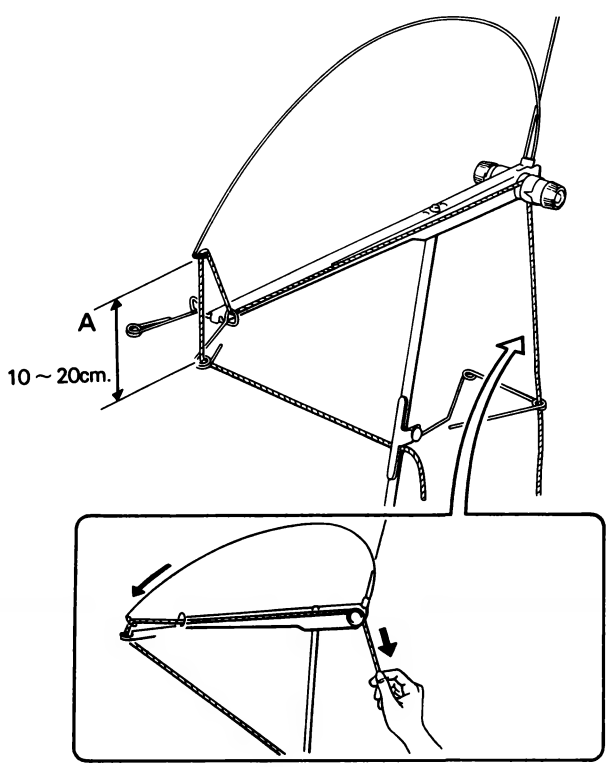
Thread the right side of Auto Tension as illustrated below.



① through right Tension Guide eyelet
② between two Tension Discs and under the red Guide Pin "A"
③ through right Yarn Guide eyelet
④ through right Tension Spring eyelet
⑤ through right Yarn Guide eyelet

Put yarn end under Yarn Clip "B".

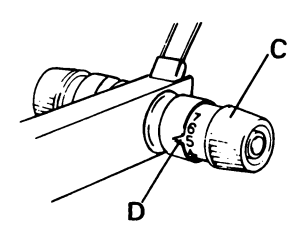
Thread the second yarn into the left side of Auto Tension in the same manner as you threaded the first yarn into the right side of the Auto Tension.
Put yarn end under upper Yarn Clip.



Adjusting Tension Dial

Adjust the Tension Dial according to type of yarn by turning the Tension Dial "C" until required number corresponds to the < shape "D" using the following as a guide:—

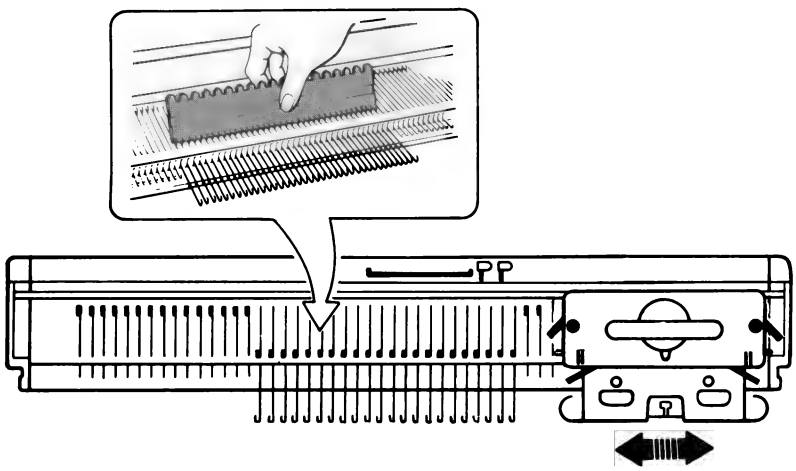
*Yarn comes out freely from the yarn ball.
*Distance between the Tension Spring and the yarn guide.....10 — 20cm. must be maintained.

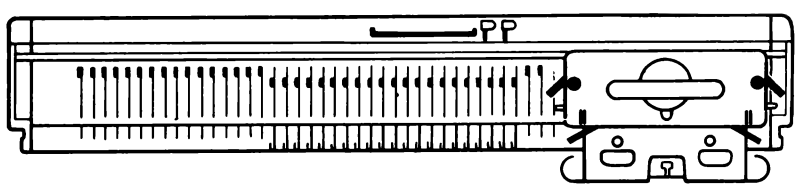


The higher the number, the tighter the tension. The lower the number the looser the tension.

It is advisable to free a length of the yarn from the ball before casting on.

CAST-ON AND KNITTING





Cast-on

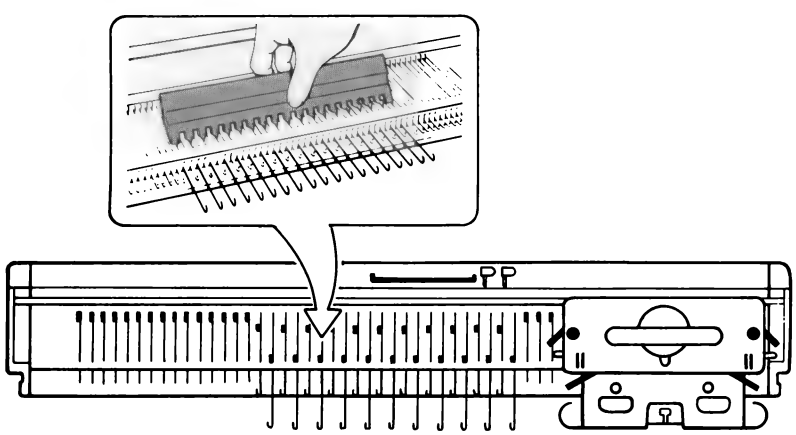
Push the required number of needles from A position to D position using flat side of the Needle Pusher.

*For Practice, use 35 needles on both sides of centre(0), 70 needles in total.

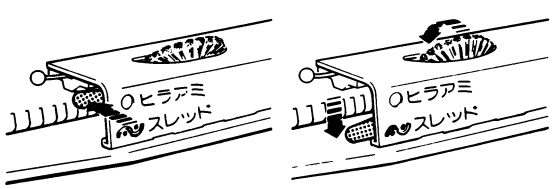
Set the Carriage as shown below.

Cam Lever..... ^
Side Levers..... ●
Russel Levers..... II
Weaving Knobs..... O
Intaria Levers..... 1

Slowly move the Carriage across the Needle Bed until it has passed all needles.



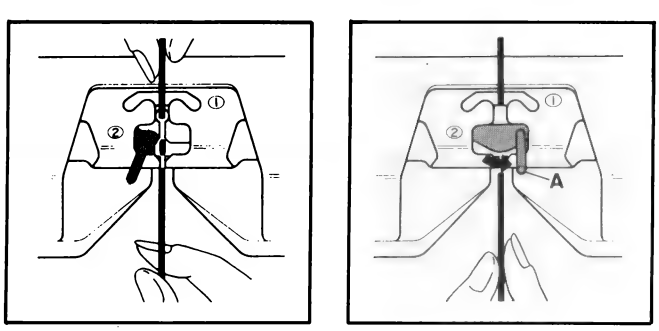
Using 1/1 side of the Needle Pusher, push every second needle from B to D position.



Weaving Knobs.....~

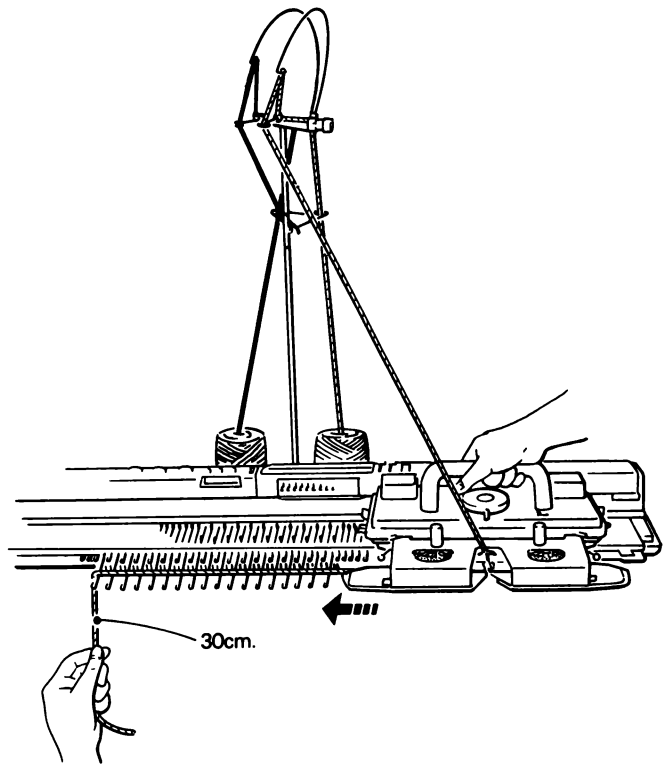
(To set the Weaving Knob to ~, push it slightly foward, it drops into position.)

Set the Stitch Dial referring to the table on page 9.



Open Yarn Feeder by moving the Yarn Feeder Gate "A" to the left.

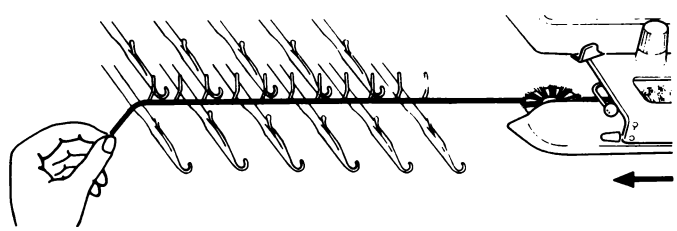
Hold the yarn with both hands and slide it into the Yarn Feeder.
Close the Yarn Feeder by moving the Yarn Feeder Gate to the right.



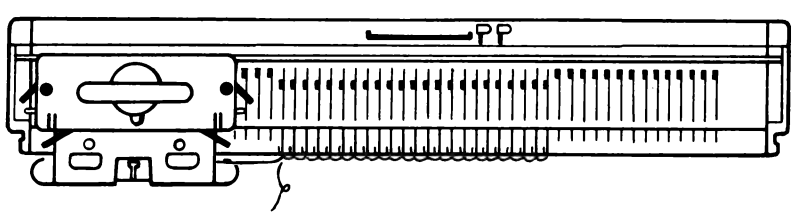
Pull the yarn end from underneath the Arm and lay it over all needles in D position.

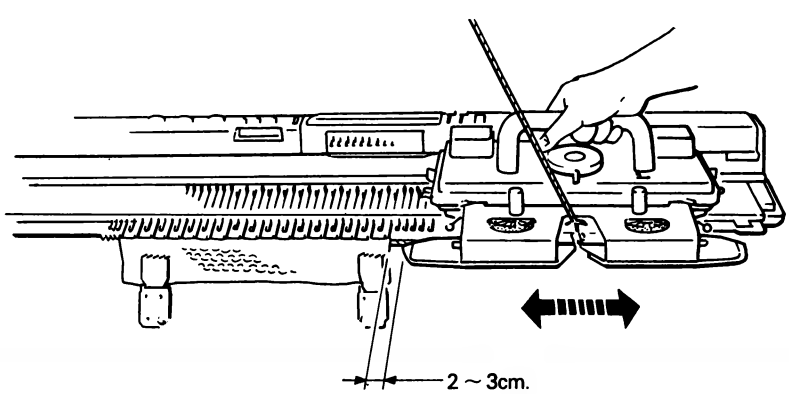
Hold the yarn loosely at the left about 30cm. from the yarn end.

Eliminate Slack yarn by pulling the yarn down at the back of Yarn Rod until the Tension Spring is nearly in a horizontal position.



Slowly move the Carriage from right to left until it has passed all the needles, knitting 1 row.





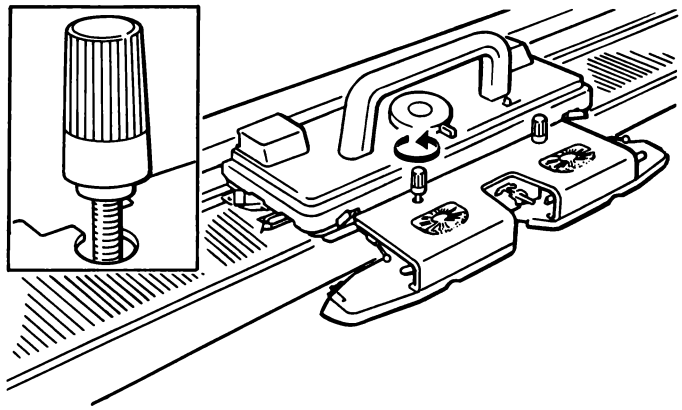
Ensure that the Arm has passed the last knitted needle by approximately 2 — 3cm. before beginning the next row.

Continue to knit 2 — 3 rows.
Cast-on has been finished.

Set the Side Levers at ▼ and Weaving Knobs at O.

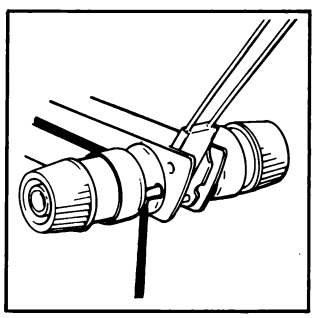
Knit 4 — 5 rows and hang Claw Weights at both ends of the fabric.

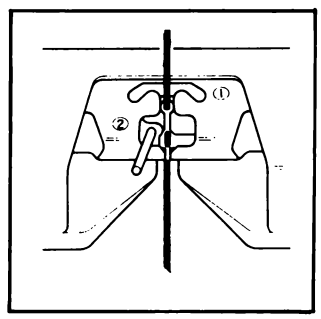
Move the Carriage from side to side to knit Stockinet.



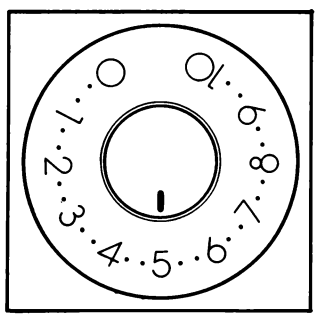
Check Points

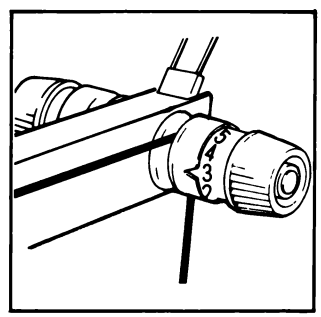
Arm is attached to the Carriage correctly.



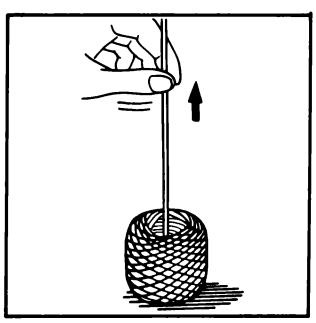


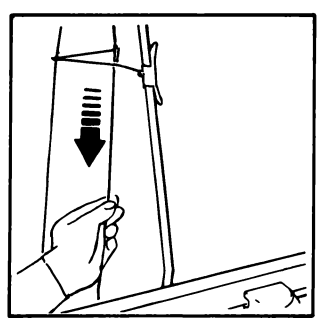
Yarn is threaded correctly through the Auto-Tension and Yarn Feeder.





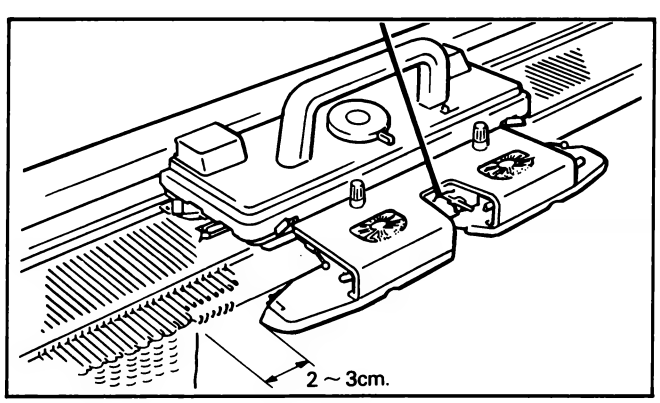
Tension Dial and Stitch Dial are set correctly.



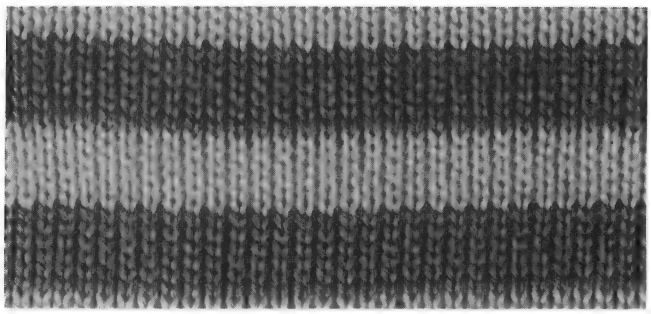


Yarn is wound correctly.

Slack yarn is eliminated.



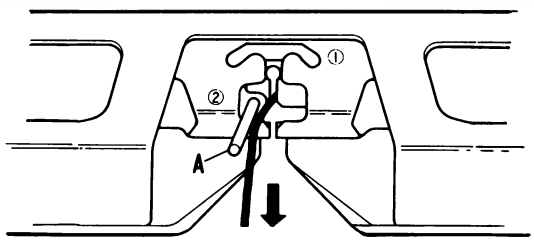
Arm has passed the last knitting needle by approximately 2—3cm. before knitting the next row.



Let's practice

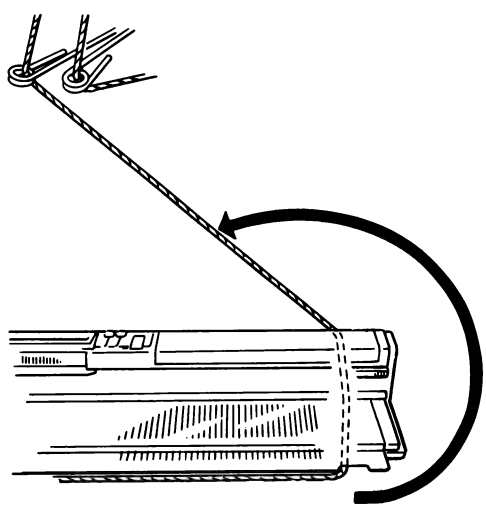
Knitting Stripe Pattern

Contine to knit stripes by changing the yarn in feeder ① every few rows.

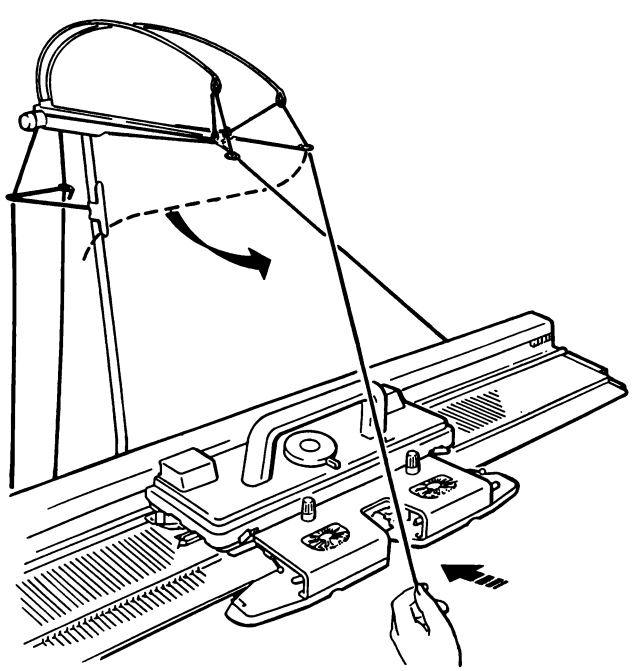


Open the Yarn Feeder by moving Yarn Feeder Gate "A" to the left.

Remove main yarn from the Yarn Feeder.



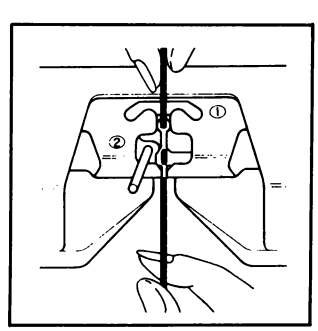
Guide the yarn under the Needle Bed from the right or left side to the rear of the machine.

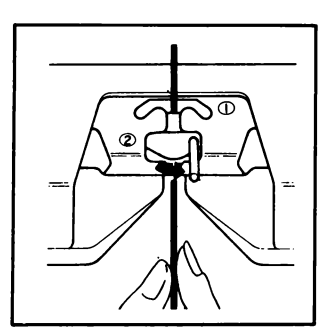


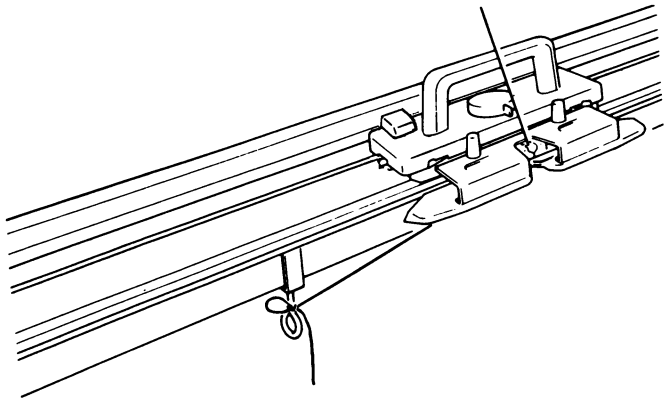
Remove the second colour yarn from the lower Yarn Clip and pull it down towards the Yarn Feeder.

Open Yarn Feeder by moving the Yarn Feeder Gate to the left and place the yarn in the Yarn Feeder.

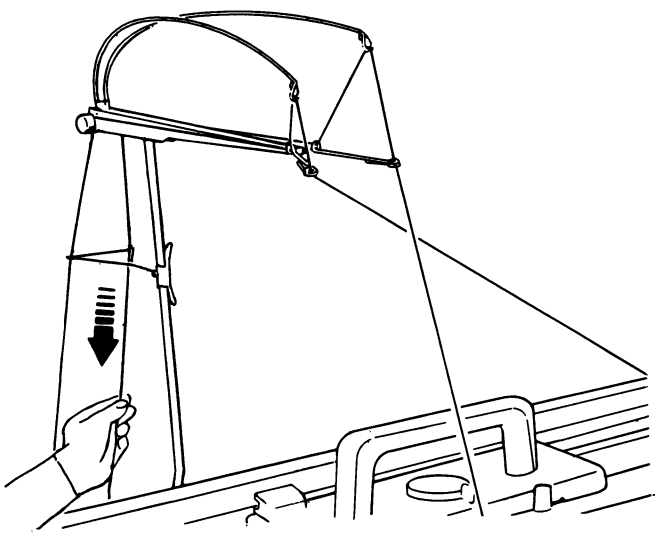
Close the Yarn Feeder by moving the Yarn Feeder Gate to the right.





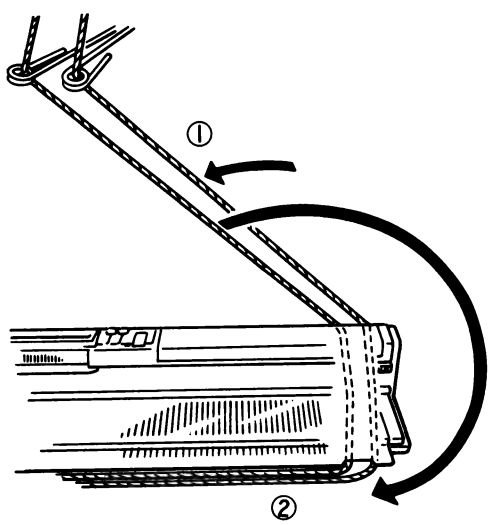


Fasten the yarn end to either Clamp.



Eliminate slack yarn by pulling the yarn down at the back of Yarn Rod until the Tension Spring is almost horizontal.

Knit an even number of rows.

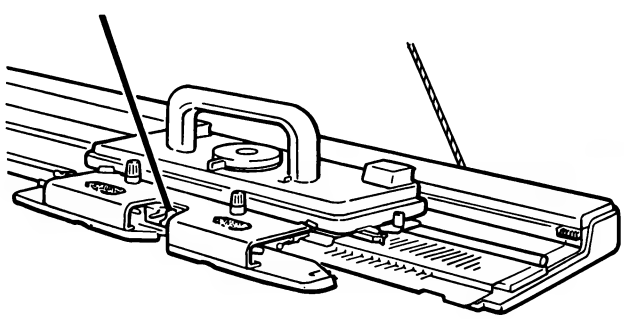


Remove the second colour from Yarn Feeder ①.

Place the yarn at the rear of the machine.

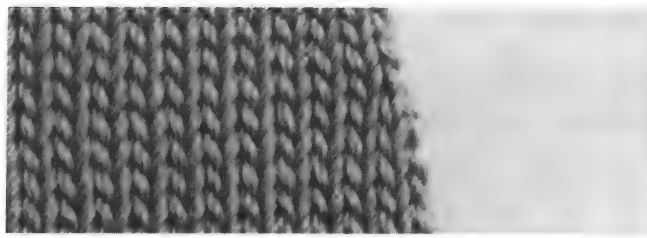
Remove the main yarn from the rear of the machine and place it into the Yarn Feeder ①.

To avoid crossing yarns, first place the rest yarn and then remove the yarn to be knitted.



Eliminate slack yarn.

Knit an even number of rows, using yarns alternately.

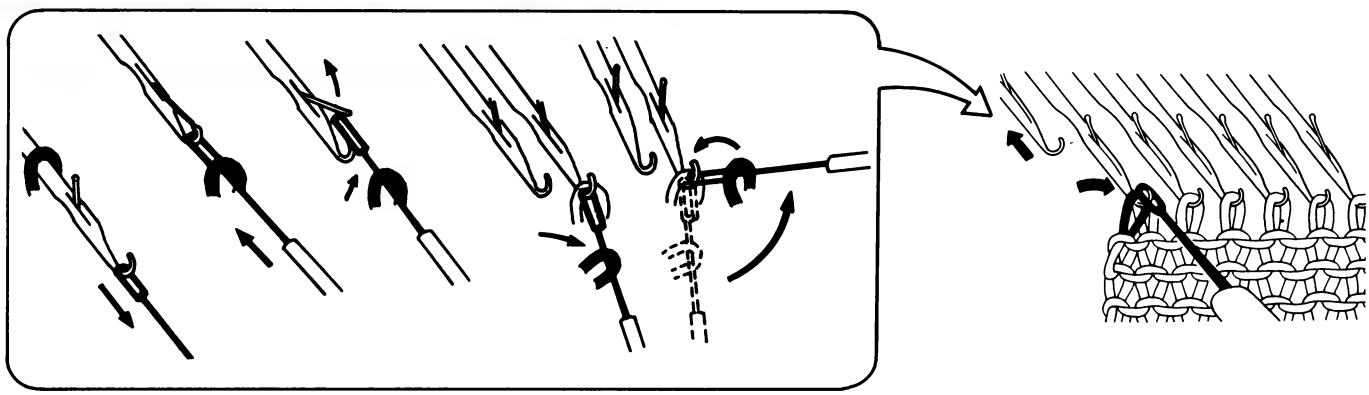


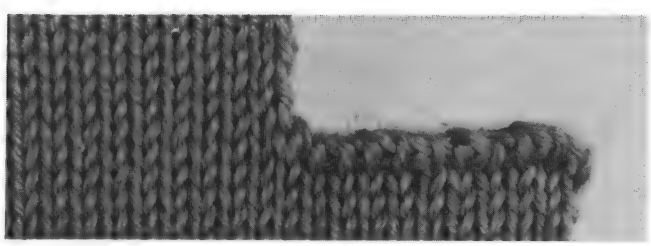
Decreasing 1 stitch

You can decrease 1 stitch at both sides of the row.

Using the Transfer Tool, transfer the end stitch onto the adjacent needle.

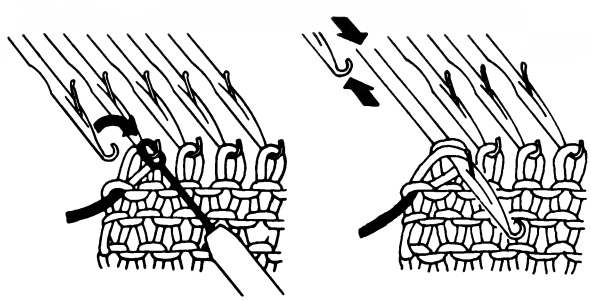
Push the empty needle to A position.

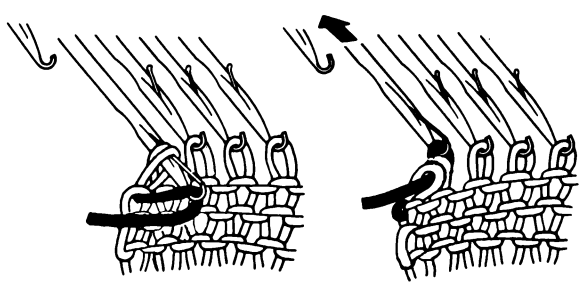


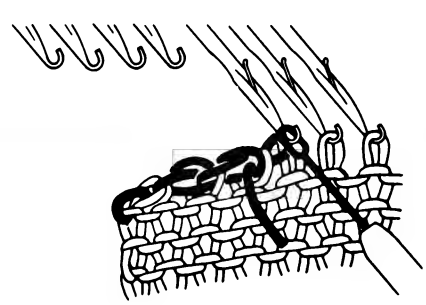


Decreasing multiple stitches

You can decrease only on the Carriage side.







To decrease at the left edge:—

1. With the Carriage at the left, hold the fabric back towards the Knitter.
   Transfer the end stitch to adjacent needle. Push the empty needle to A position.

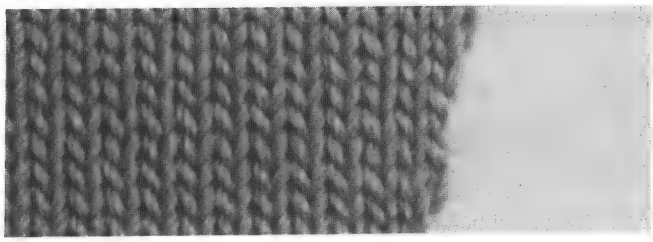
2. Push the second needle to D position until both stitches are behind the latch.

3. Lay yarn from left to right in the open hook of the needle.
   (When decreasing at the right edge, lay yarn from right to left.)

4. Hold yarn slightly down and push the needle back to B position.
   The two stitches slip off the needle leaving a new stitch.

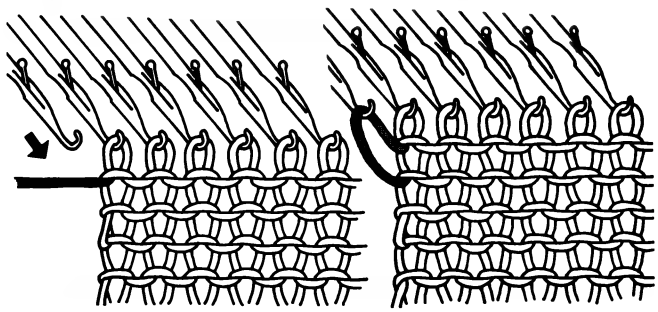
5. Continue the same procedure until the required number of stitches have been decreased.
   Place the last decreased stitch onto its adjacent needle.

* Repeat in reverse to decrease at the right.

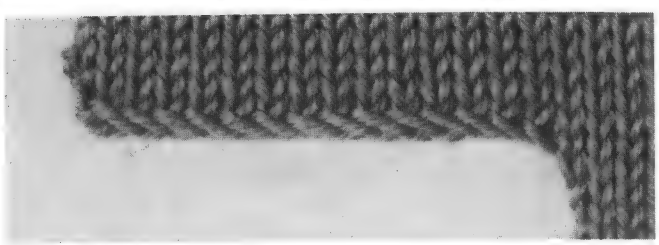


Increasing 1 stitch

You can increase 1 stitch at a time only on the Carriage side of the knitting.

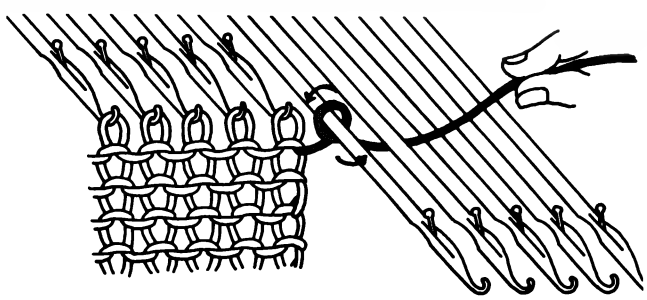


Push 1 needle at the Carriage side from A to B position.



Increasing multiple stitches

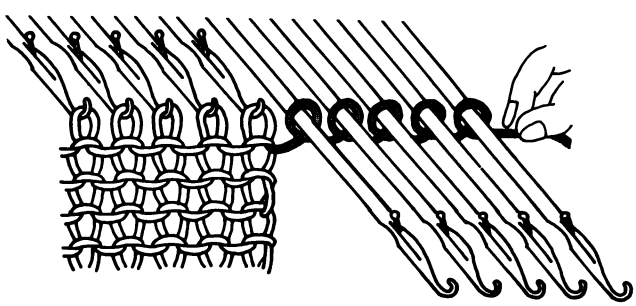
You can increase only on the Carriage side.

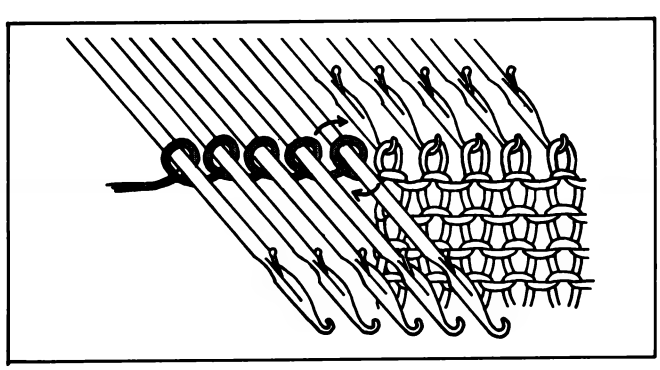


When the Carriage is at right side:—

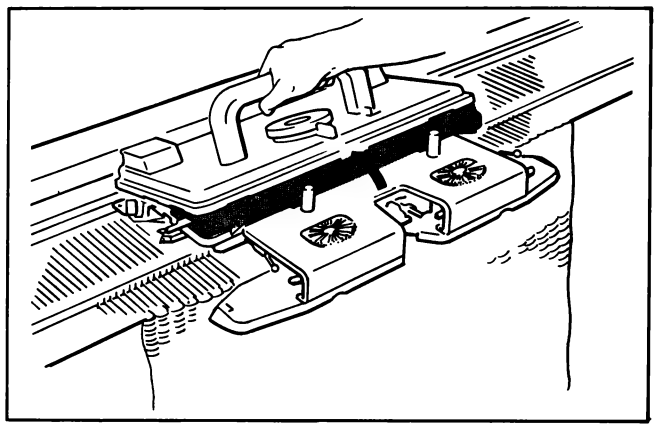
1. Push the required number of needles from A to D position. Pull some yarn from the Yarn Feeder and wind it loosely around the empty needles in the anti-clockwise direction.

2. Push loops against sinker posts, eliminate slack yarn, and continue knitting.





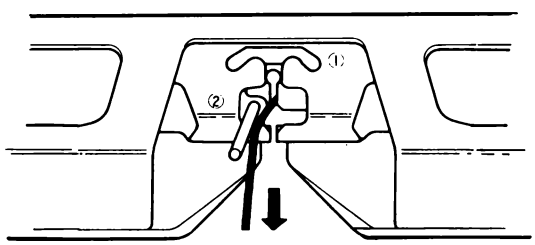
When the Carriage is at the left side, wind yarn around needles in the clockwise direction.



Moving the Carriage without knitting.

Stop the Row Counter, Pattern Panel, Knit Contour if they are in use.

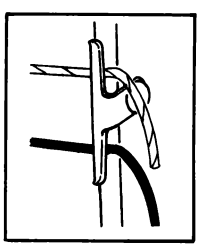
Push the Release Lever to raise the main part of the Carriage and move the Carriage across the fabric.

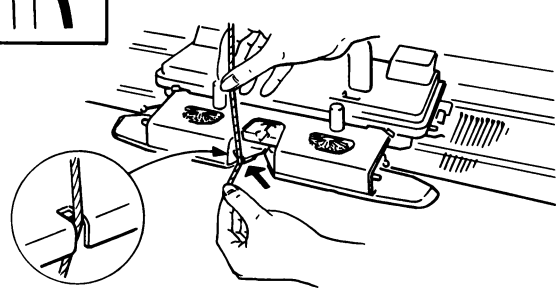


Remove the knitting fabric.

— without Casting off —

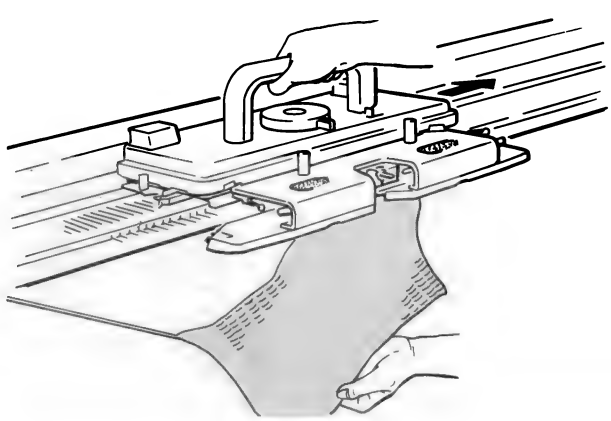
Open the Yarn Feeder and remove yarn.





Cut the main yarn using Yarn Cutter and place its end into the lower Yarn Clip.

Cut the second yarn and place its end into the upper Yarn Clip.

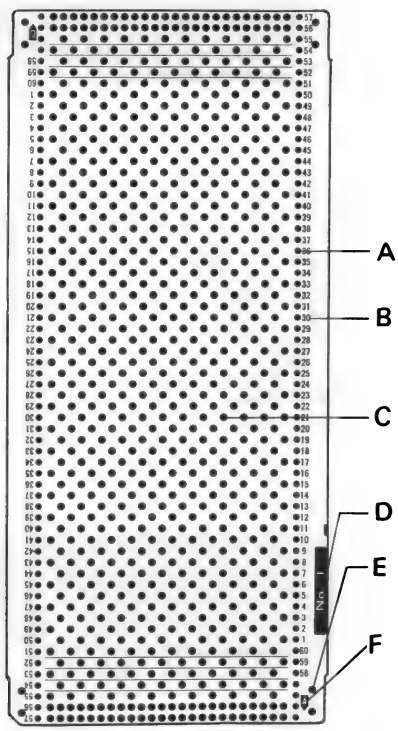


Remove weights from the fabric.

Set Cam Lever to "Λ" and move Carriage across the fabirc.

The fabric comes off the needles.

PATTERN KNITTING WITH MAIN CARRIAGE



Standard Punch Cards for Main Carriage

20 Punch Cards are supplied with the machine.

Names of each part of the Card.

A — card feeding hole
B — pattern row number
C — punched pattern holes
D — card number
E — Card Snap holes
F — card inserting direction (see page 20)

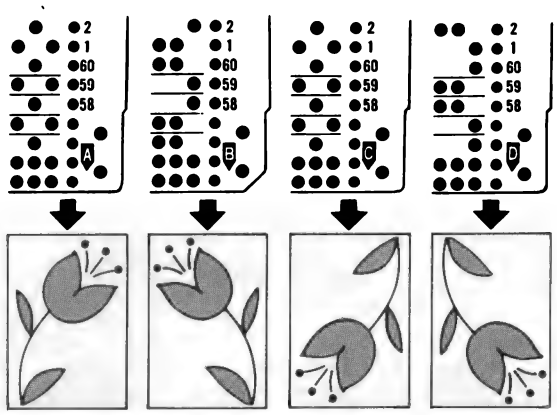
Important:
Keep the Cards away from heat and avoid direct rays of the sun.
Do not fold or bend the Card.

You can make your own patterns using optional blank card and Handy Punch or Punching Machine.

With these 20 Punch Cards, the following patterns can be produced.

*only for in colours

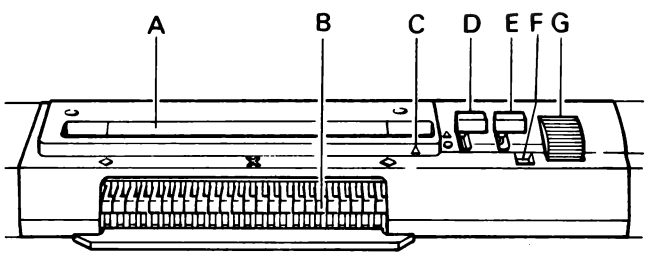
Card No.	Fair Isle (knit-in)	Tuck Stitch	Slip Stitch	Weaving	Punch Lace	Magic Point
No.1	○	○		○	○	
No.2	○		○	○	○	
No.3	○	○	○	○		
No.4	○	○	○	○		
No.5	○					○
No.6	○					○
No.7	○	○	○	○	○	
No.8	○	○	○	○		
No.9	○	○	○	○		
No.10	○	○	○			
No.11	○	○	○	○		
No.12	○	○	○			
No.13	○					
No.14	○		○	○	○	
No.15	○				○	
No.16	○				○	
No.17	○				○	
No.18	○				○	
No.19	○		*○			
No.20	○			○	○	



Direction of Punch Card

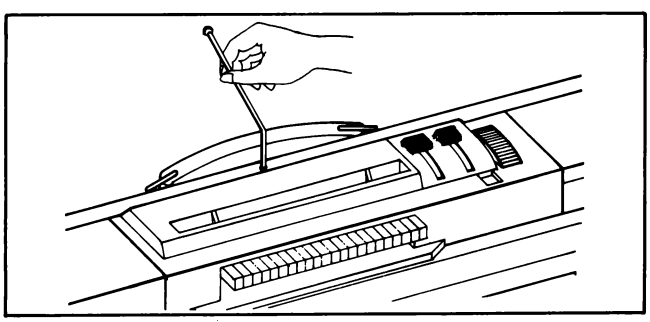
Each Punch Card has 4 different uses and is marked A, B, C and D.

Direction "A" is basic pattern and directions B, C and D change the pattern as shown opposite.



Pattern Panel

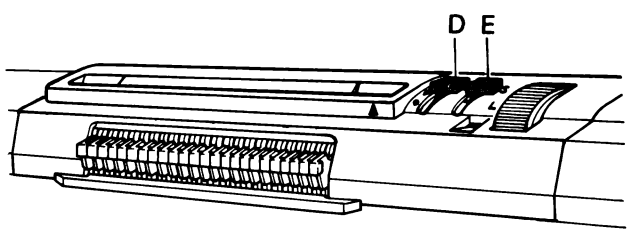
A — Punch Card insertion slot
B — touch levers
C — pattern row number indicator
D — Stop Knob
E — L Knob
F — L Knob indicator
G — Punch Card feeding dial



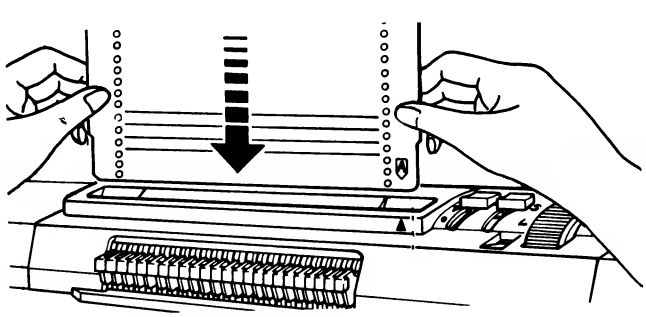
Inserting Punch Card

Prepare two Card Snaps and a Punch Card.

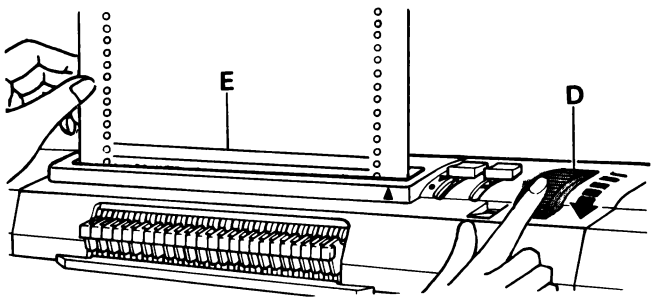
For Mod. 600, remove the Card Guide from the Accessory Box and insert it vertically into the hole at the back of the case.



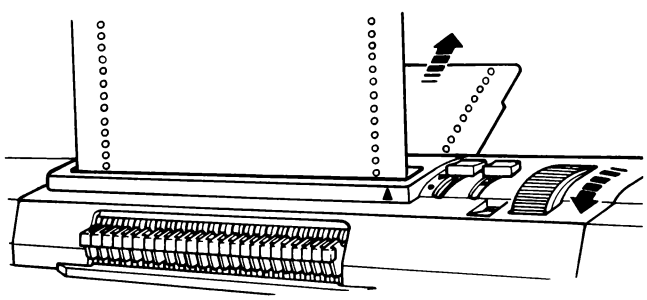
Stop Knob "D".....▼
L Knob "E".....S



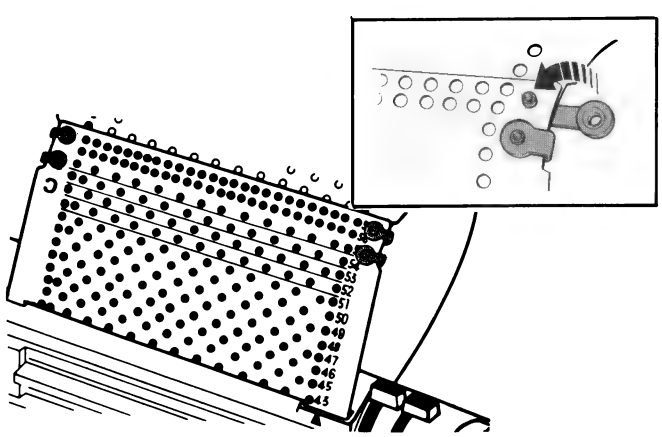
Holding the Punch Card straight with numbers at the right, insert it into Punch Card insertion slot and push it down slightly.



Turn the Punch Card feeding dial "D" towards you and at the same time, check that the horizontal lines "E" on the Punch Card are parallel with the Punch Card insertion slot.



Continue turning the feeding dial until the card end comes out at the back.

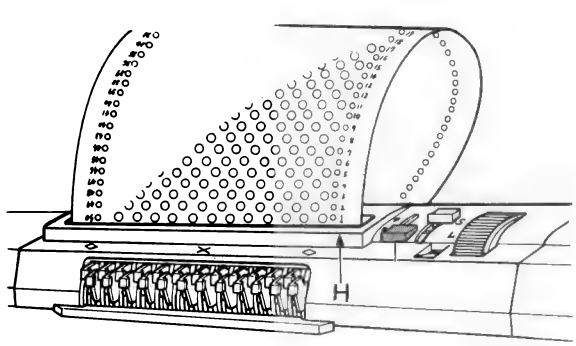


Overlap the ends of the Card as shown in diagram.

It is important that the card is joined in this way.

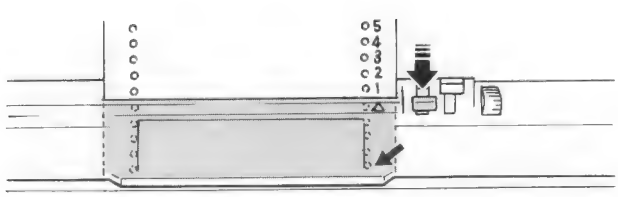
Line up the 2 holes on each side.

Join the ends of the card with Card Snaps.

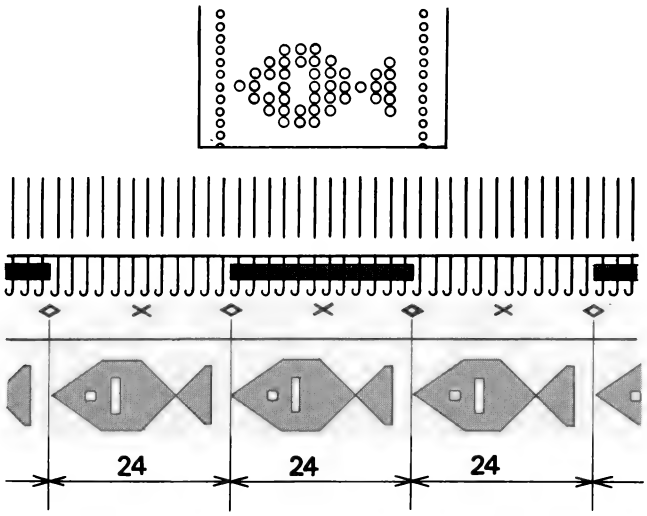


Turn the feeding dial until pattern row number 1 shows above the pattern row number indicator "H".

Set the Stop Knob to ●.



There is a 5-row difference between the row being knitted and the row showing above the pattern row number indicator.

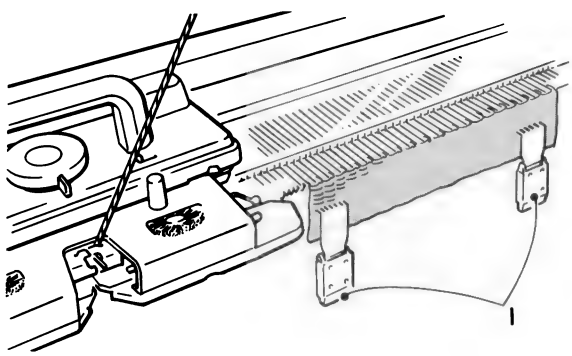


At the front of the Pattern Panel and on the front of the Needle Bed are markings ✕ and ◇ .

✕ — indicates the centre of a pattern.

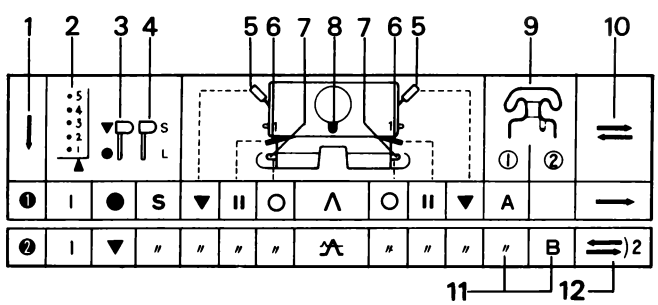
◇ — indicates width of pattern.

Between two ◇ markings are 24 needles.
The centre of a pattern always comes at the centre(0).



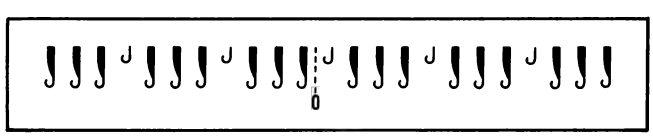
Before starting pattern knitting, knit 7 — 8 rows of Stockinet or waste knitting and leave the Carriage at the left of the Needle Bed.

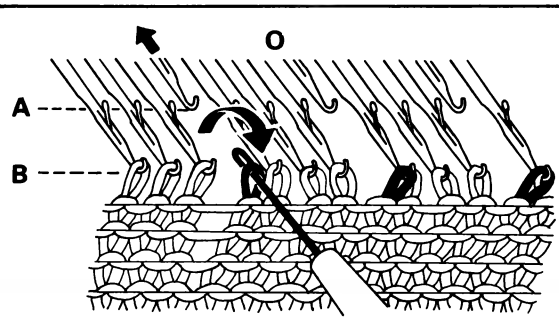
Hook Claw Weights "1" at both edges of the knitting.
(Move them up as knitting progress.)



Reading Operation Table

1 — Order
2 — Card Memory Number
3 — Stop Knob
4 — L Knob
5 — Side Levers
6 — Russel Levers
7 — Weaving Knobs
8 — Cam Lever
9 — Yarn Feeder ① and ②. Yarn Feeder ② column also means Weaving Yarn Holder or Platting Yarn Feeder.
10 — Carriage direction
11 — A, B and C stand for different colours.
12 — Number of rows to be knitted.





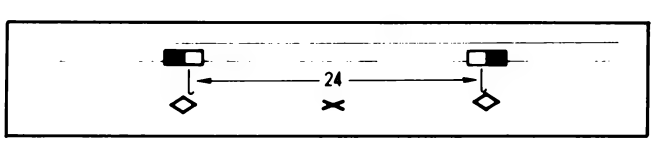
Always set Intarsia Levers to "1" while pattern knitting using Punch Card.

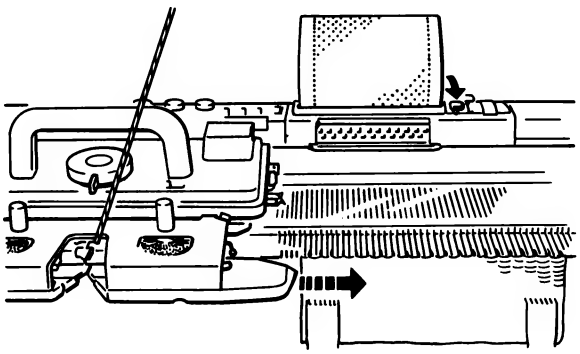
Needle Arrangement

Transfer stitches on the needles to the adjacent needles and push empty needles to A position.

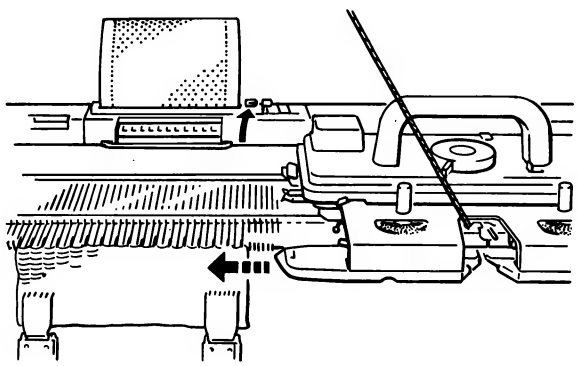
Point Cam M Setting

Place the Point Cams on the indicated positions of the Needle Bed.
Figure on the Operation Table shows the number of needles between Point Cams.

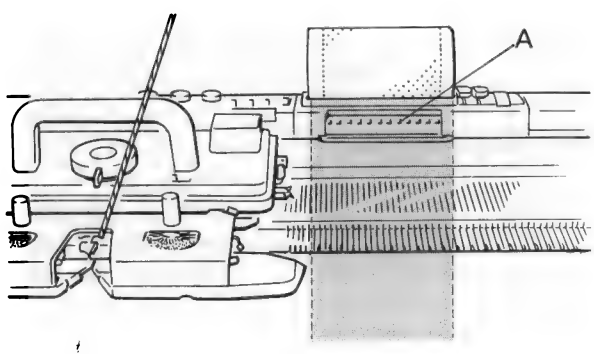




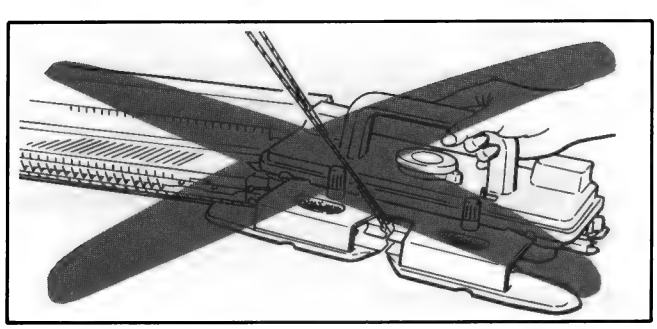
Column ❶ on the Operation Table is the row to memorize the 1st row of the pattern.



Start pattern knitting from Column ❷ .

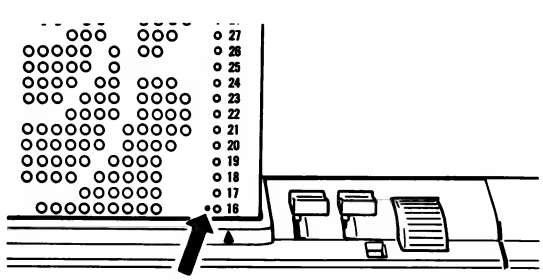


When moving the Carriage back and forth, ensure that the Carriage has completely passed all the Touch Levers "A".

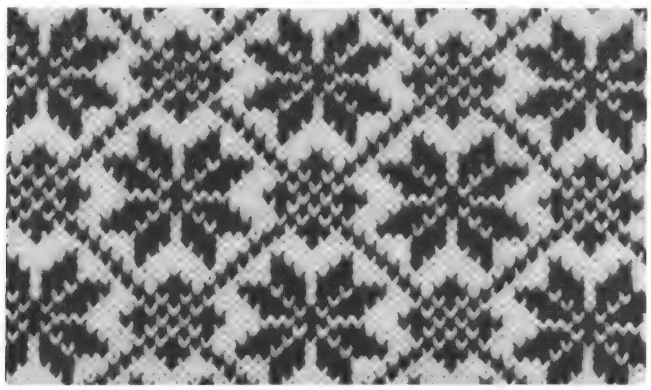


Move the Carriage at an even speed.

Do not remove the Carriage from the Needle Bed.
If the Carriage has been removed by accident, see pages 42 — 43 to reset pattern.



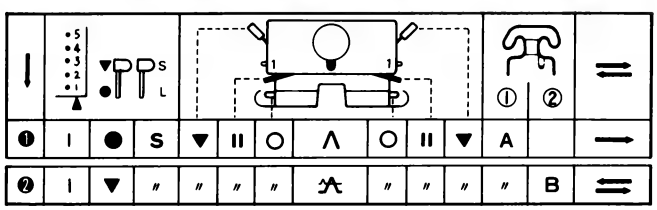
If the Card Memory Number with ● mark shows above the indicator, change the yarn to contrast yarn.



Two yarns of different colour are knitted simultaneously and form patterns on the fabric.

Perforated area of Punch Card knits the yarn in Yarn Feeder ②, and non-perforated area knits the yarn in Yarn Feeder ①, ground colour yarn.

The sample is knitted with Punch Card No.16-A.

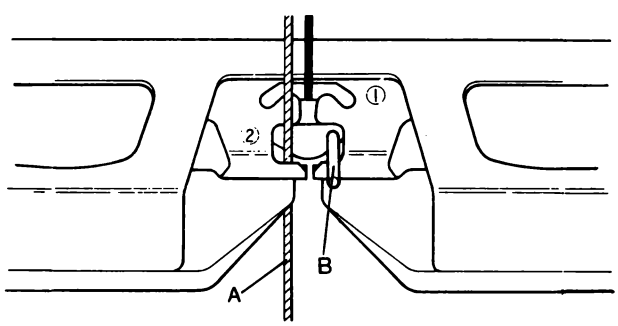


Hang the Claw Weights at both edges of the fabric.

Set the controls as required in ORDER ❶.

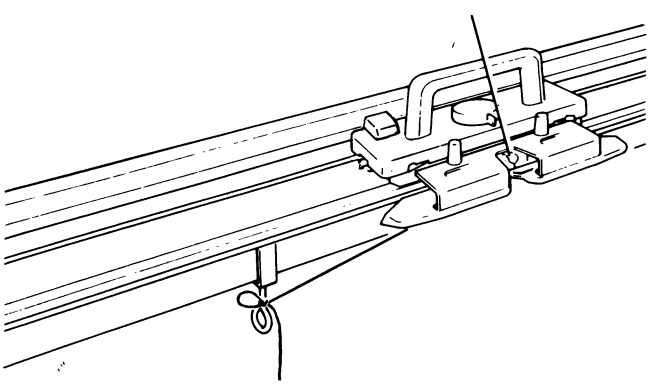
Knit 1 row from left to right.

Set the controls as required in ORDER ❷.



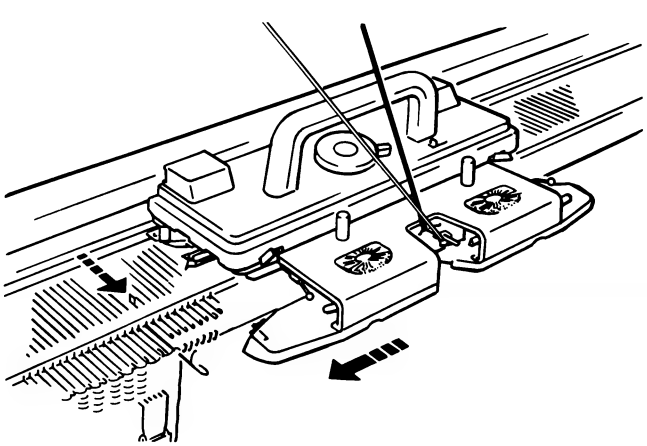
Remove the second yarn end from the Yarn Clip and pull it down towards the Carriage.

Insert the second yarn "A" into the Yarn Feeder ②, left side of the Guide Pin "B".



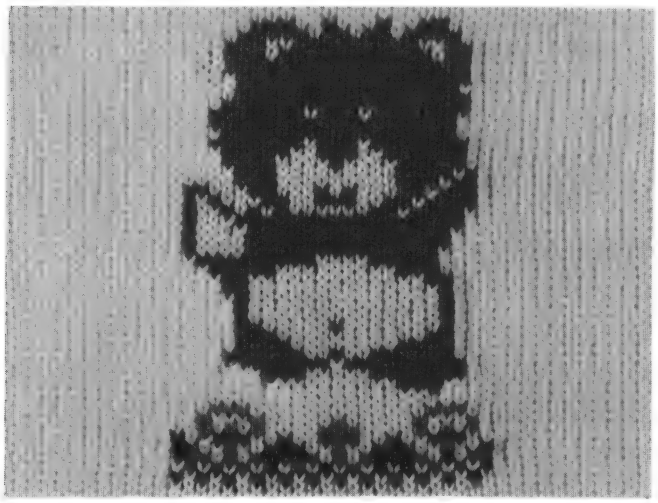
Fasten the yarn end to the Clamp.

Eliminate slack yarn by pulling yarn down at the back of Tension Rod.



If the end stitches do not knit properly, push end needle on the Carriage side to D (or C in partial knitting) position before knitting the row.

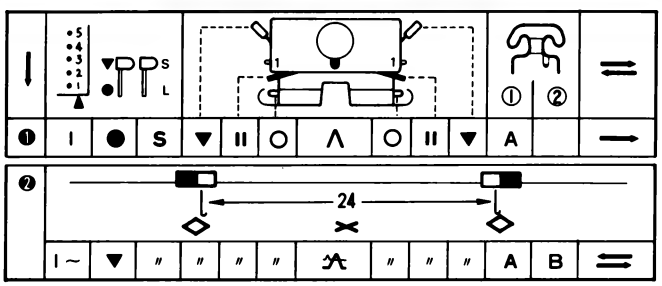
Knit the required number of rows as above.



Make a pattern (usually in Fair Isle) wherever as you like on the knitting.

This sample is knitted with Punch Card No.5-A.

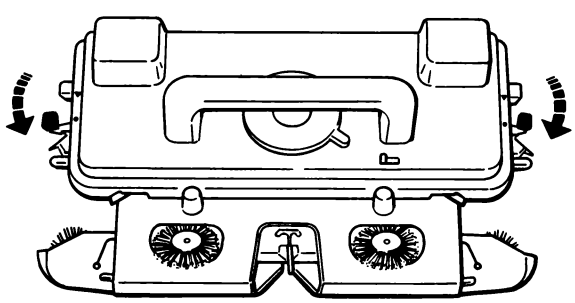
Sometimes the tension becomes tight when the pattern is away from the centre or if the knitting is wide knit the single motif within the centre 150 needles.



Hang the Claw Weights at both edges of the fabric.

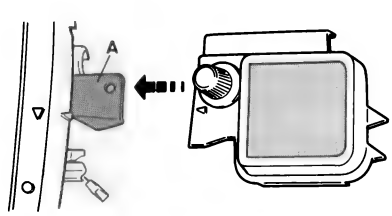
Set the controls as required in ORDER ❶.

Knit 1 row from left to right.

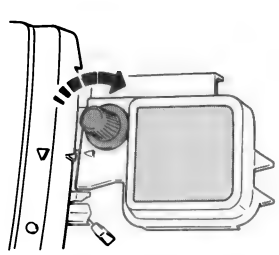


Remove the left and right Magic Cams from the Accessory Box.

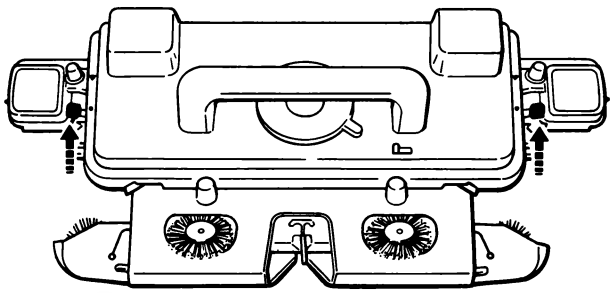
Set both Side Levers to ●.



Place both Magic Cams onto the extension plates "A" ensuring that the triangle marks on the Magic Cams and the Carriage face each other.

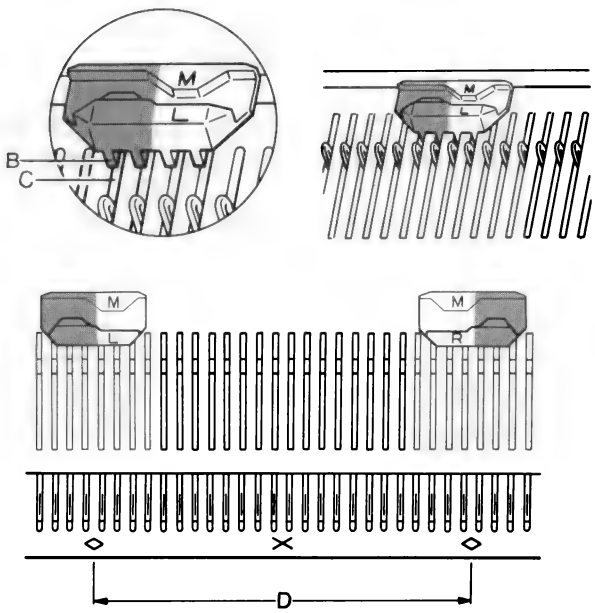


Fasten the Magic Cams to the extension plates by turning the knurled knobs clockwise.



Reset both Side Levers to ▼.

If you make a mistake while knitting and move Carriage using the release lever, remove the Magic Cams from both sides of the Carriage.

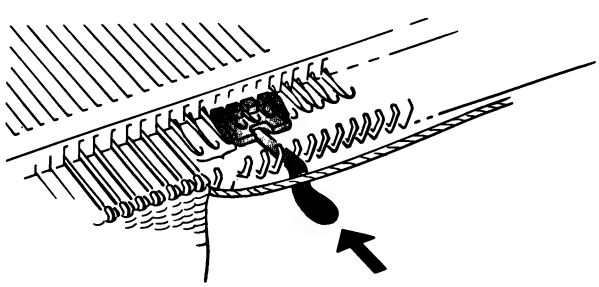


Remove the left and right Point Cams from the Accessory Box.

left Point Cam — marked M, L
right Point Cam — marked M, R

Set both Point Cams so that their division lines (for orange and white) are between the 12th and 13th needles on both sides of centre(0) of the Needle Bed.

Ensure that the four studs "B" of the Point Cam fit correctly into the needle groove ends "C", furthest from you on the Needle Bed.

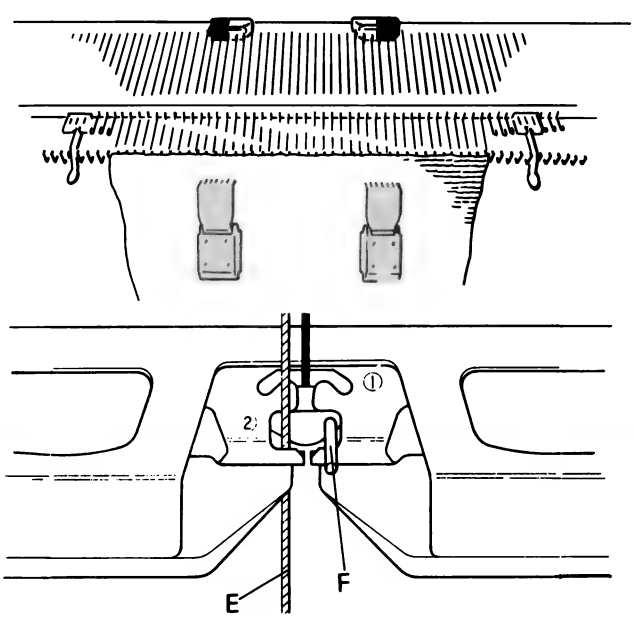


Remove two Yarn Separators from the Accessory Box.

Open latches of the 4th, 5th and 6th non-working needles at the left and right of the working needles.

Insert the Yarn Separators under these three needles, and push them back as far as they go.

The yarn must passes over the Yarn Seperator.

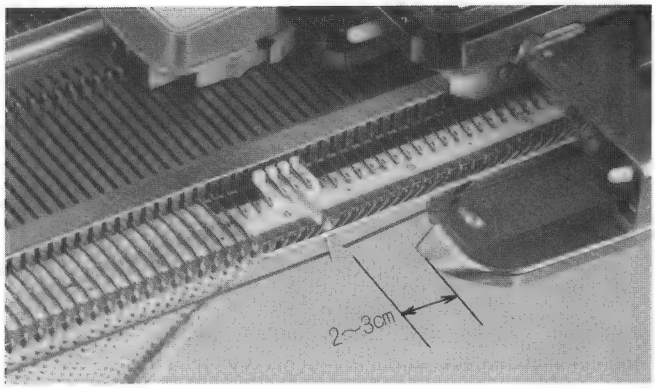


Hang the Claw Weights on the knitting, below the left and right Point Cams.

Set the controls as required in ORDER ❷.

Insert the second yarn "E" into the Yarn Feeder ②, at the left side of the Guide Pin "F".

Knit 1 row from right to left.



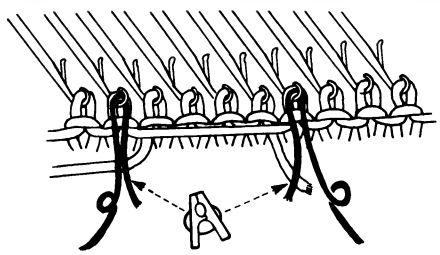
Ensure that the Arm has passed the Yarn Separator by approximately 2 — 3cm. before knitting the next row.

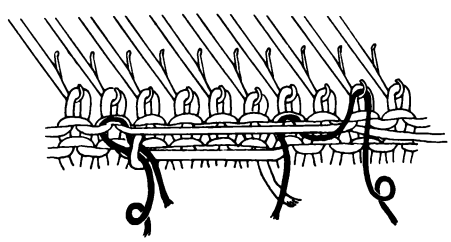
When knitting single motif in Fair Isle, yarns must be arranged as follows:—

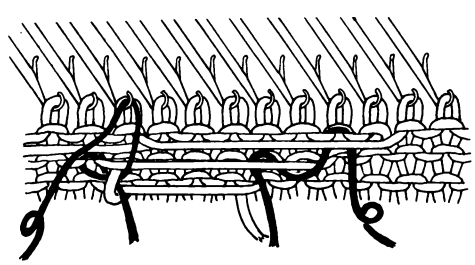
ground yarn (Yarn Feeder ①) — over Yarn Separator
contrast yarn (Yarn Feeder ②) — under Yarn Separator

Yarn Separator must part two yarns.

If they are both at the same side of separator, part them manually.







To eliminate separation of contrast yarn and ground yarn at the edge of the single motif pattern, follow the procedure below.

1. Prepare two pieces of yarn, 50 — 60cm. long, cut from the ground yarn.

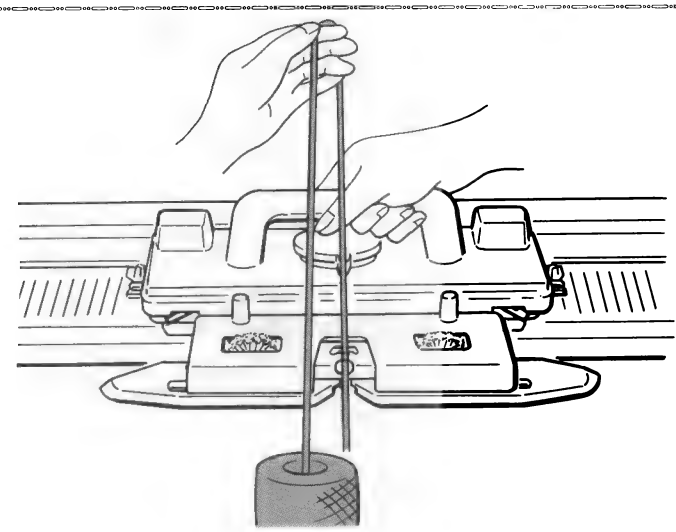
2. Place the yarns in the hook of the needle immediately adjacent to the last needle knitted in contrast yarn at both edges of the single motif.
   It is advisable to hook a clip to the short end of the yarn.

3. Knit the next row, and place the yarn in the hook of the needle immediately adjacent to the single motif at Carriage side.

4. Knit the next row, and hook the yarn on the needle adjacent to the single motif at Carriage side.

5. Repeat the above steps on each row at the Carriage side.

To knit Stockinet following on from the single motif, set Cam Lever to Λ and knit.



Hand Feeding

Feeding the yarn into the Yarn Feeder by hand is useful in the following instances.

* Knitting three different colours.
* Knitting Ravel Cord to separate the main yarn and waste knitting to make a hem.
* The yarn end being too short to thread through the Auto Tension.

How to hand feed

— Place the third yarn in the Yarn Feeder ①.
— Hold the yarn between the thumb and forefinger lightly above the Yarn Feeder, and move slowly to knit the first row, and repeat throughout.

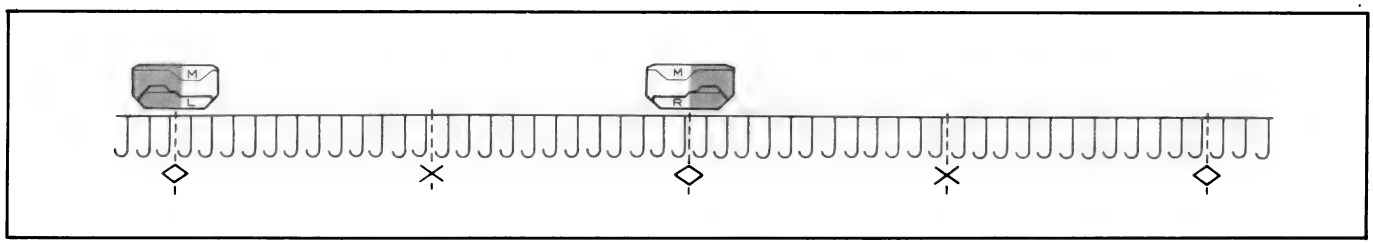
● Single Motif Variations

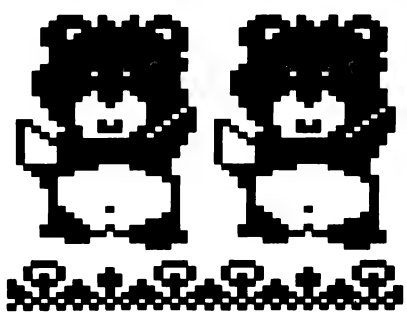
2 sets of left and right Point Cams M are included in accessories.

You can make a wide variety of single motif designs by use of these Point Cams as shown below.

KNITTING 1 BEAR

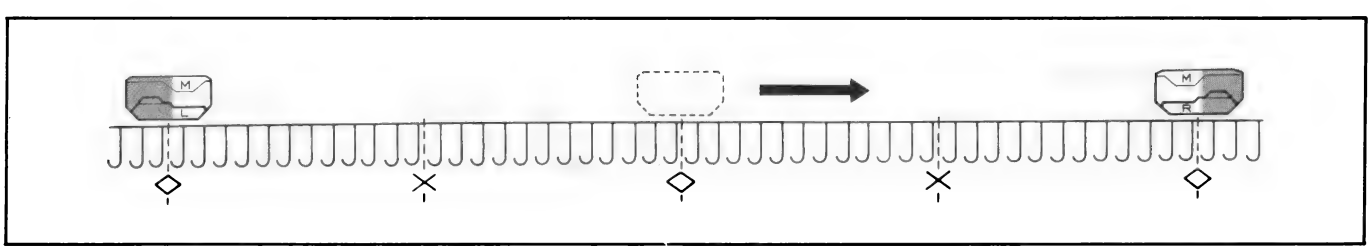
To knit 1 bear, place the left and right Point Cams at two adjacent ◇ marks. See page 26.

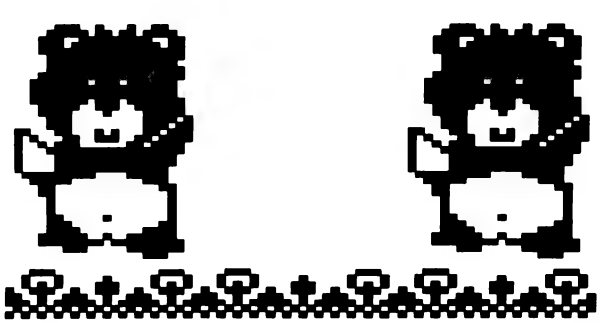




KNITTING 2 BEARS

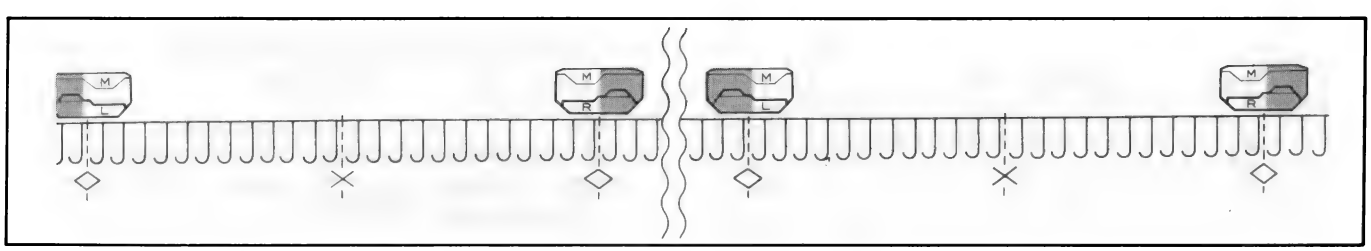
To knit 2 bears, move the left or right Point Cam to next adjacent ◇ mark.

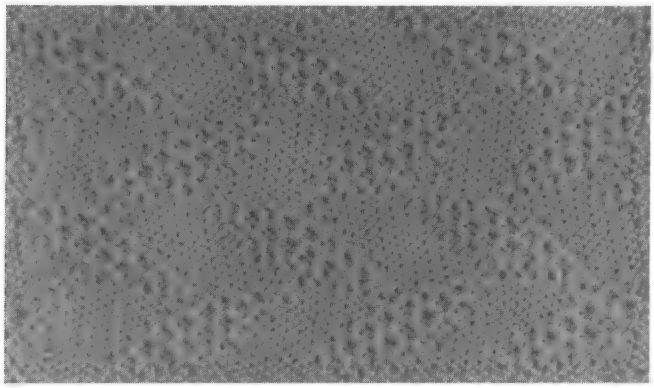




KNITTING 2 BEARS WITH A GAP BETWEEN

To leave a space between two bears, place another set of the Point Cams at two ◇ marks, away from the first set.



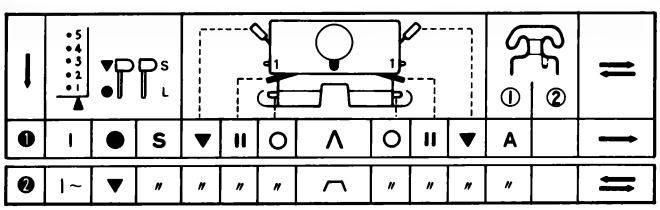


Perforated area of Punch Card knits Stockinet and non-perforated area leaves a loop of yarn in needle hooks.

You can tuck up to 4 rows using medium type smooth yarn.

The sample is knitted with Punch Card No.12-A.

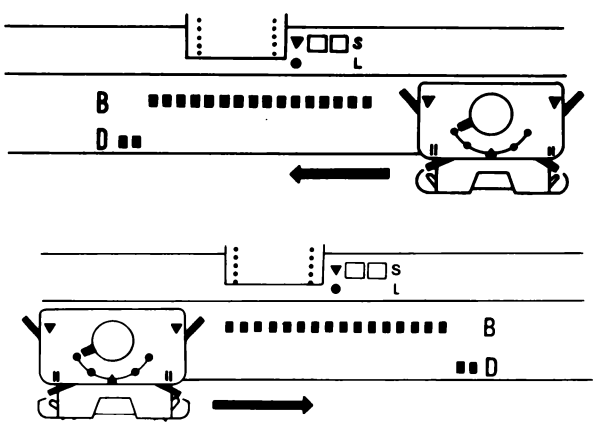
Hang Claw Weights both edges of the knitting.



Set the controls as required in ORDER ❶.

Knit 1 row from left to right.

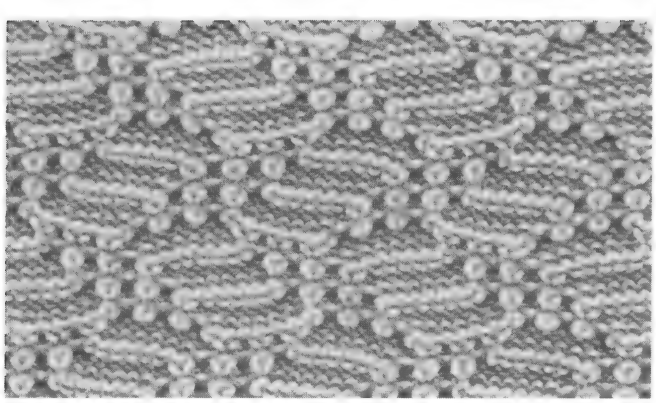
Set the controls as required in ORDER ❷.



Continue knitting.

If the edge stitches are not knitted perfectly, push up two end needles on the side opposite the Carriage to D (or C in partial knitting) before the next row.

● Tuck Stitch in Colours



Knit two or more different colour yarns alternately in tuck stitch pattern.

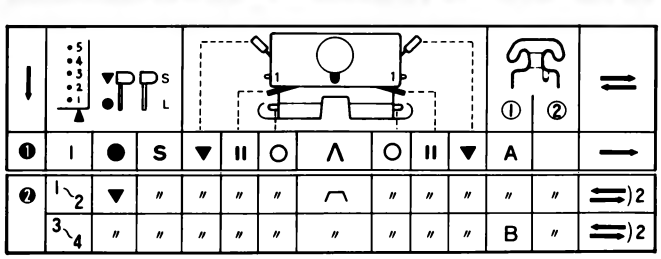
The sample is knitted with Punch Card No.12-A.

Hang Claw Weights at both edges of the knitting.

Set the controls as required in ORDER ❶.

Knit 1 row from left to right.

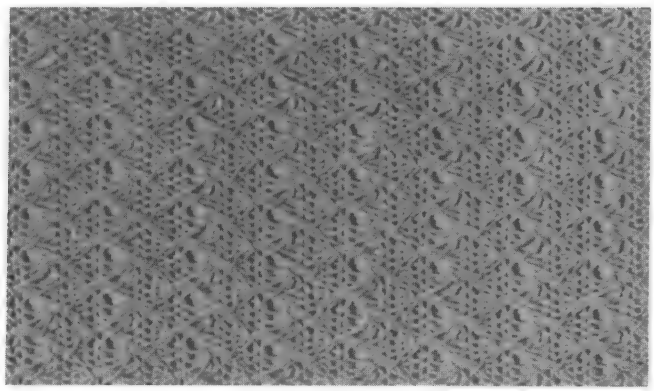
Set the controls as required in ORDER ❷.



Knit following Operation Table changing yarns in the same way as for "Knitting Stripe Pattern" on pages 14 — 15.

If the edge stitches are not knitted perfectly, push up two end needles on the side opposite the Carriage to D (or C in partial knitting) before knitting the next row.

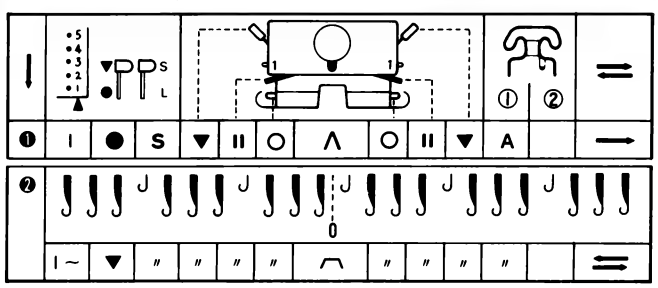
● Tuck Lace



Arrange the needles by transferring stitches.

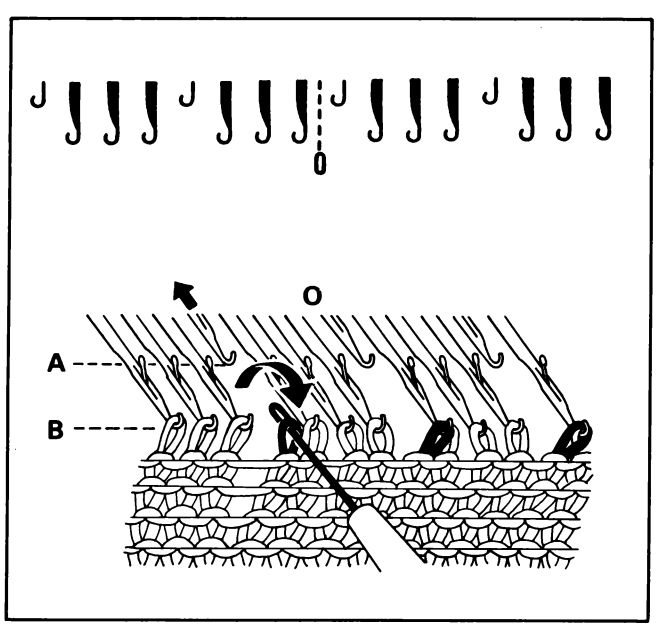
The sample is knitted with Punch Card No.3-A.

Hang Claw Weights at both edges of the knitting.



Set the controls as required in ORDER ❶.

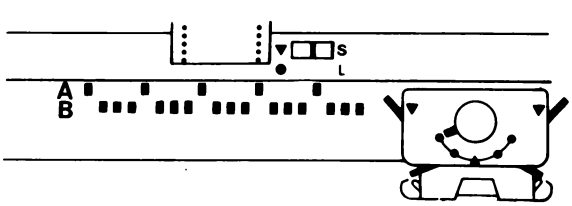
Knit 1 row from left to right.



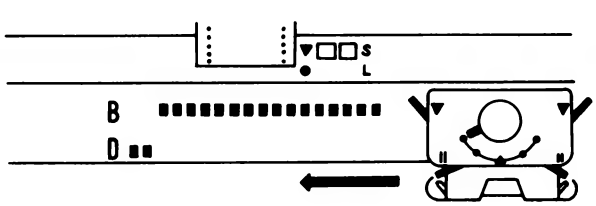
Transfer every fourth stitch to its adjacent needle starting at centre "O" on the Needle Bed as shown on opposite.

Push the empty needles to A position.

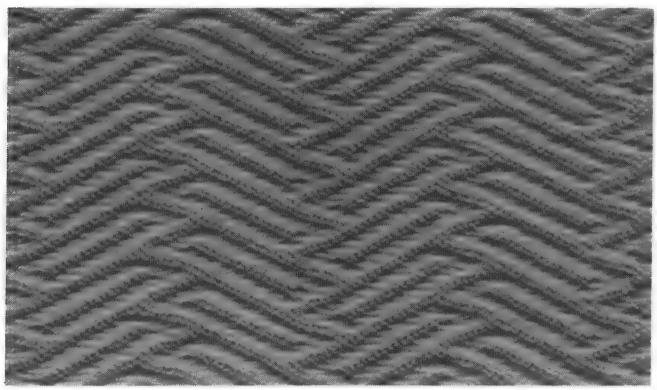
Set the controls as required in ORDER ❷.



Continue knitting.

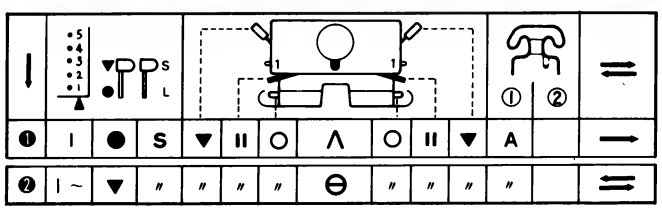


If the edge stitches are not knitted perfectly, push up two end needles on the side opposite the Carriage to D (or C in partial knitting) before knitting the next row.*



Perforated area of Punch Card knits Stockinet and non-perforated area leaves a float of yarn on the purl side of the fabric.

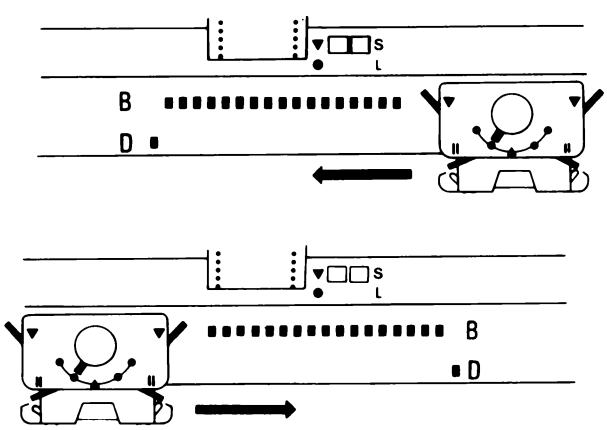
The sample is knitted with Punch Card No.14-A.



Hang Claw Weights at both edges of the fabric.

Set the controls as required in ORDER ❶.

Knit 1 row from left to right.



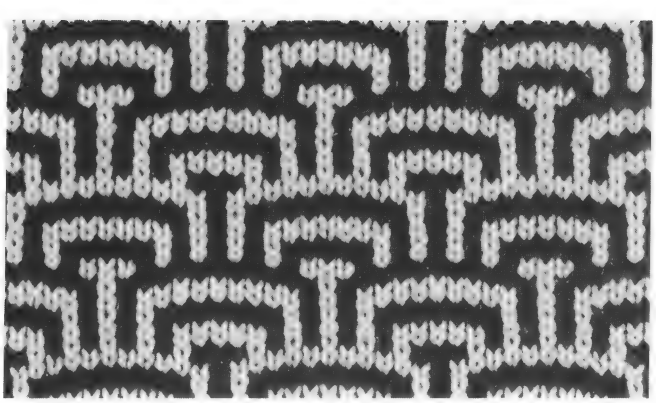
Set the controls as required in ORDER ❷.

Continue knitting.

Set the Stitch Dial 1 number higher than for stockinet as the fabric of slip stitch pattern is tighter.

Push one end needle on the side opposite the Carriage to D (or C in partial knitting) position before knitting the next row.

● Slip Stitch in Colours



Knit two or more different colour yarns alternately in slip stitch pattern.

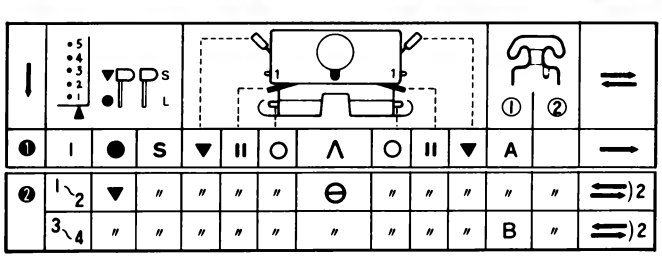
The sample is knitted with Punch Card No.10-A.

Hang Claw Weights at both edges of the fabric.

Set the controls as required in ORDER ❶.

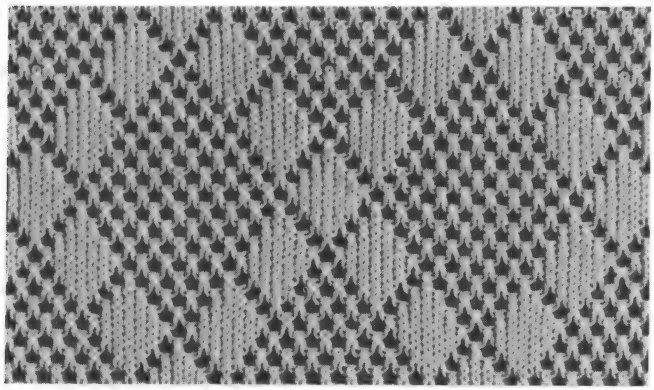
Knit 1 row from left to right.

Set the controls as required in ORDER ❷.



Knit following the Operation Table changing yarns in the same manner as done for "Knitting Stripe Pattern" on pages 14 — 15.

Push one end needle on the side opposite the Carriage to D (or C in partial knitting) position before knitting the next row.

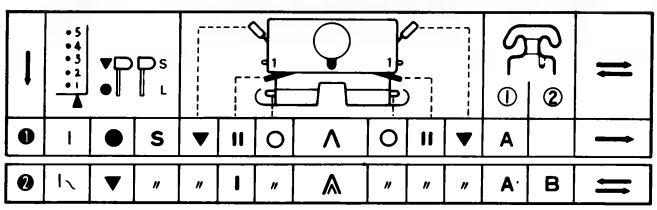


Combinations of thick yarn and self coloured very fine yarn produce a lace effect pattern.

Perforated area of Punch Card knits the yarn in Yarn Feeder ② (thinner yarn) and non-perforated area knits both yarns together.

The sample is knitted with Punch Card No.18-A.

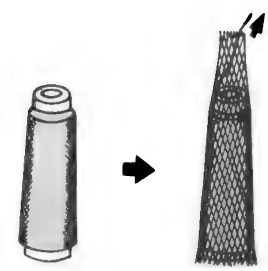
Hang Claw Weights at both edges of the knitting.

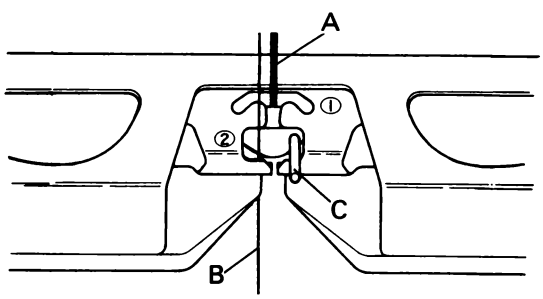


Set the controls as required in ORDER ❶

Knit 1 row from left to right.

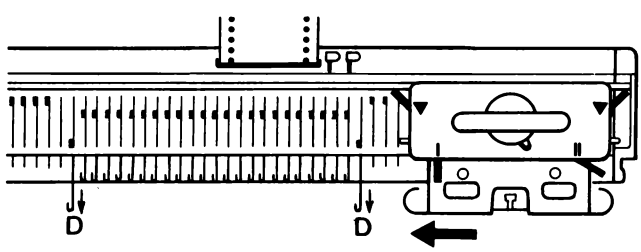
Cover spool of nylon thread with Stop Net (an optional accessory) or with a cut-piece of stocking.
Thread thinner yarn through the Auto Tension.





Set the controls as required in ORDER ❷.

Put thicker yarn "A" into the Yarn Feeder ① and thinner yarn "B" into the Yarn Feeder ②, left side of Guide Pin "C".

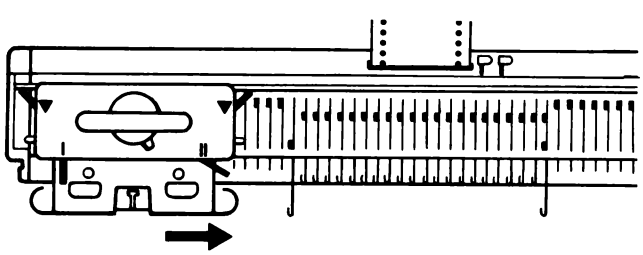


Bring 1st and last needle to D position.

Knit from right to left.
The end needles will not knit.

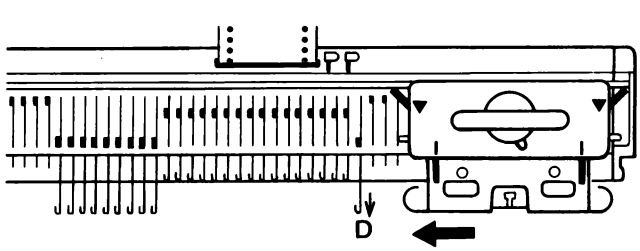
Knit from left to right.

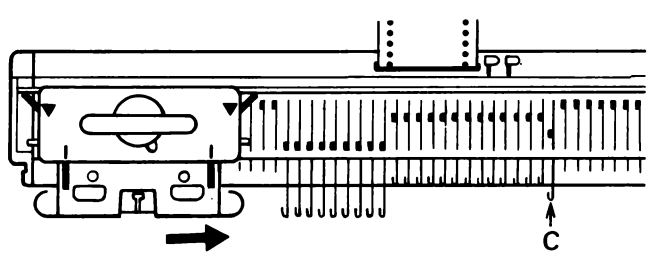
The end needles will be knitted back to B position.

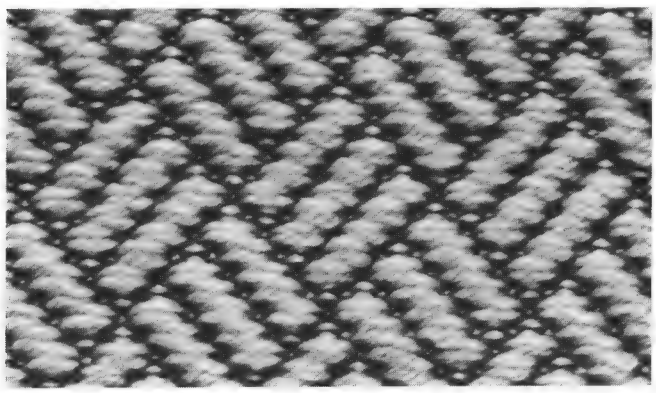


Knit the required number of rows pushing 1st and last needles to D position when Carriage is at the right.

When partial knitting, set both Russel Levers to **I**, push 1 needle at opposite side of resting needles to D position to knit from right to left and push back the needles to C position to knit from left to right.

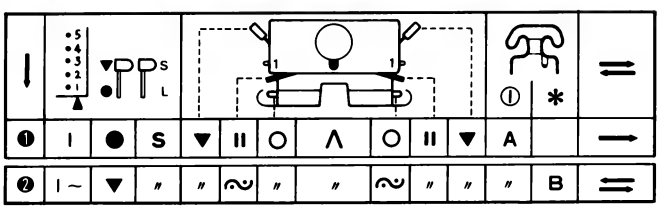






By passing fancy yarn or different materials (hereafter called weaving yarn) between the Stockinet stitches on purl side, a pattern is made on the surface of the fabric.

Perforated area of the Punch Card passes the Weaving yarn over the stitches formed by main yarn, and non-perforated area passes the weaving yarn under the stitches.

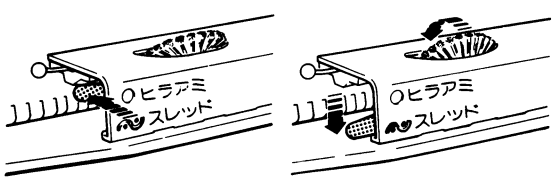


The sample is knitted with Punch Card No.9-A.

Hang Claw Weights at both edges of the fabric.

Set the controls as required in ORDER ❶.

Knit 1 row from left to right.

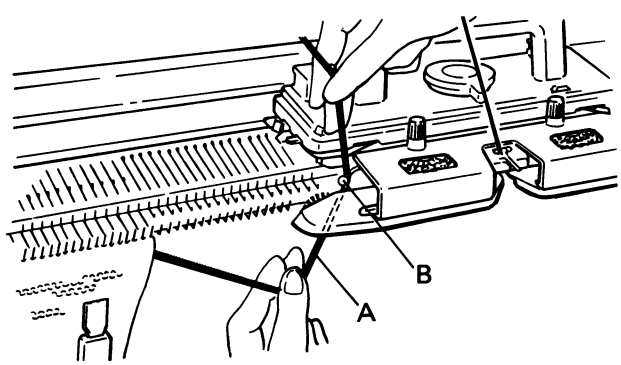


Thread the weaving yarn into the Auto Tension and pull it down towards the Needle Bed.
Fasten the yarn end to the Clamp at the Carriage side.
Adjust Tension Dial. (1 number higher than for stockinet)

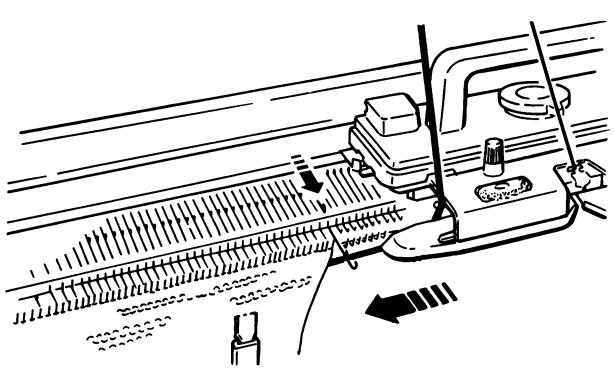
Set the controls as required ORDER ❷.

To set the Weaving Knob to ~, push up these knobs.

*mark in the Yarn Feeder column refers Weagving Yarn Holder.

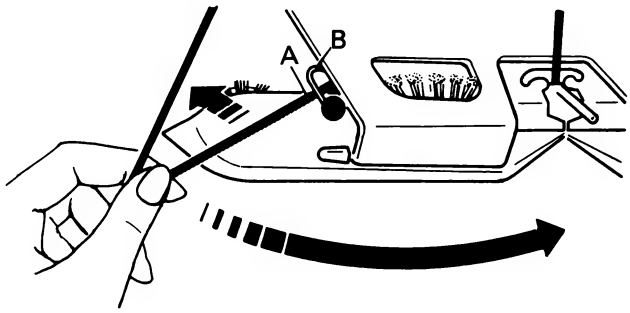


Hook weaving yarn "A" into the left Weaving Holder "B" (always put weaving yarn in Weaving Holder nearest to the knitting, as shown in the illustration left.)



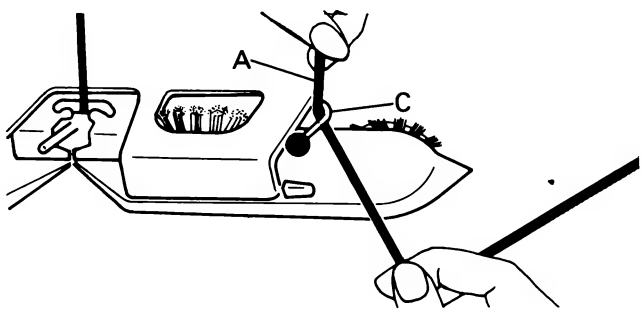
Push one end needle on the Carriage side to D (or C in partial knitting) position.

Slowly move the Carriage from right to left.

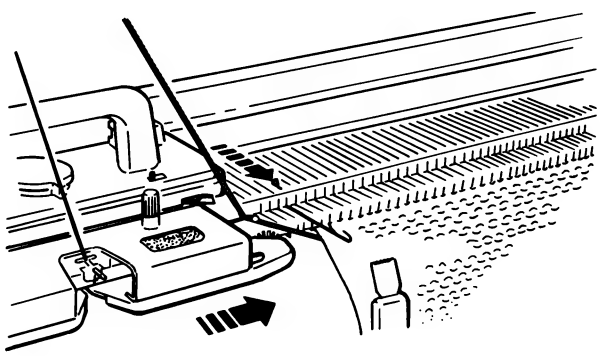


Remove weaving yarn "A" from the left Weaving Yarn Holder "B".

Bring the weaving yarn underneath the Arm and move it to the right side of the Carriage.

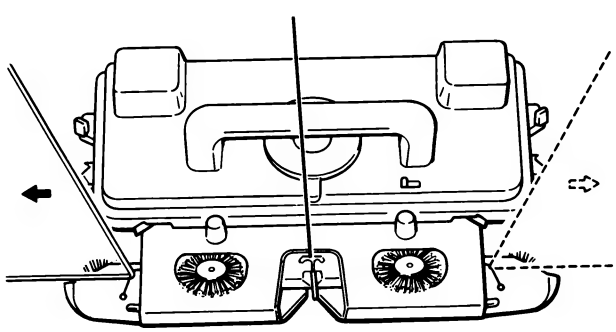


Hook weaving yarn into the right Weaving Yarn Holder "C".

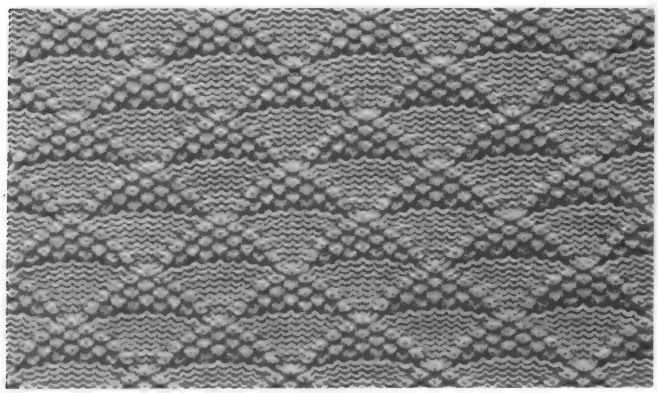


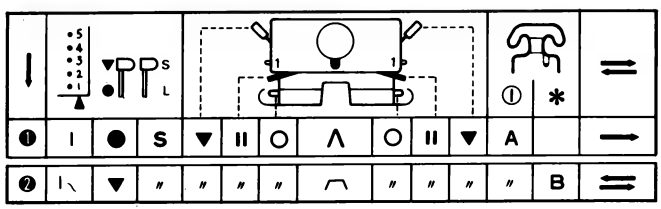
Push one end needle on the Carriage side to D (or C in partial knitting) position, before knitting the next row.

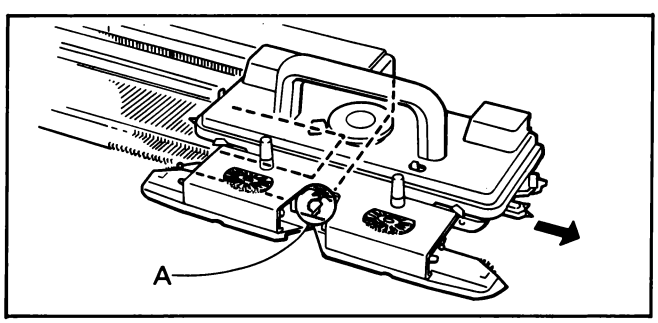
Knit from left to right.

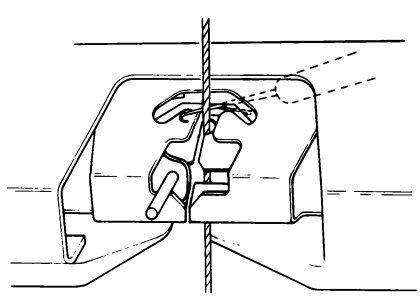


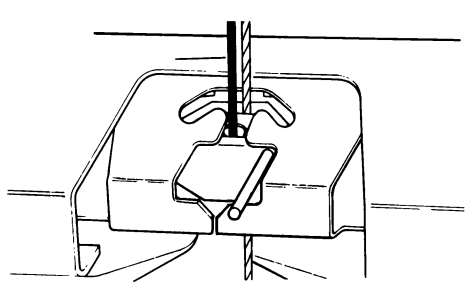
Knit the required number of rows always placing weaving yarn in the leading side of the Carriage.

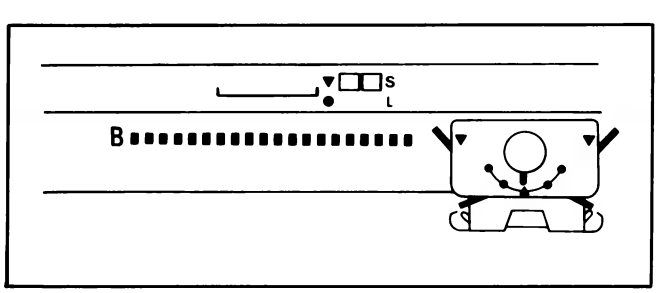












Two different colour yarns are knitted together. One yarn appears on one side while the second yarn appears on the revers of the fabric.

The sample is knitted with Punch Card No.10-A.

Since two yarns are knitted together, use thinner yarns than for other patterns, and Stitch Dial must be set at the number which totals the stitch dial number for each type of yarn used. (e.g. if two tension 3 type yarns are used, knit at Stitch Dial 6)

Hang the Claw Weights at both edges of the knitting.

Set the Controls as required in ORDER ❶.

Knit 1 row from left to right.

Remove the yarn from the Yarn Feeder.

Move the Carriage to the right until the Yarn Feeder "A" has passed the end sinker post.

Remove second yarn (platting yarn) from the Yarn Clip and pull it down towards the Carriage.

Put the platting yarn into the Yarn Feeder ①.

Fasten the end of platting yarn to the clamp.

Thread the Platting Yarn Feeder as follows:—

With the right hand, insert the Tappet Tool from underneath the Arm and catch the second yarn (platting yarn) with the hook.

Pull the second yarn away from you and let the yarn end hang underneath the Arm.

Replace the main yarn into the Yarn Feeder ①.

Close the Yarn Feeder Gate.

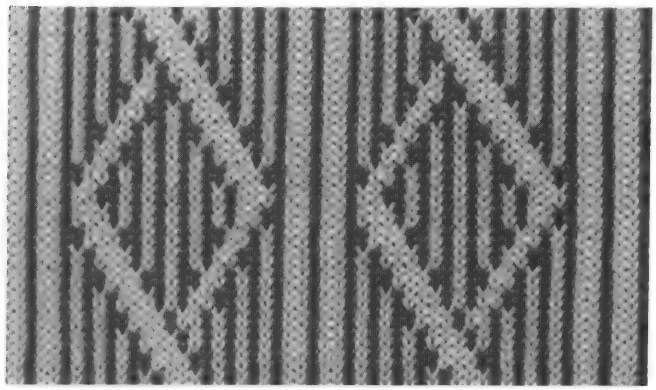
Set the Controls as required in ORDER ❷.

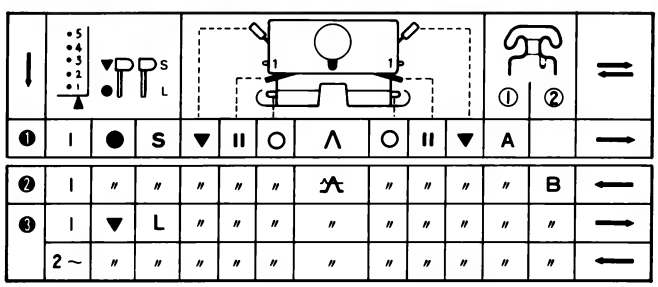
✱mark in the Yarn Feeder colum refers Platting Yarn Feeder.

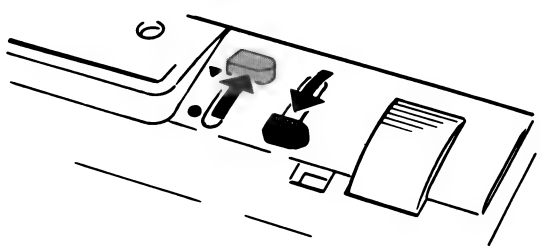
Knit the required number of rows.

Each yarn appears on the fabric as follows:—
Platting yarn..... on purl side
Main yarn.....on plain side

To knit platting in stockinet, set the controls as required in stockinet knitting.







When the L Knob is set to L, the Punch Card moves only on every alternate row, thus producing an elongated pattern. To get correct pattern using L Knob, set the Stop Knob and L Knob as follows.

The sample is knitted with Punch Card No.20-A.

Set the controls as required in ORDER ❶.

Knit 1 row from left to right.

The 1st pattern row (ORDER ❷)

Stop Knob..... ●
L Knob..... S

Following rows (ORDER ❸)

Stop Knob..... ▼
L Knob..... L

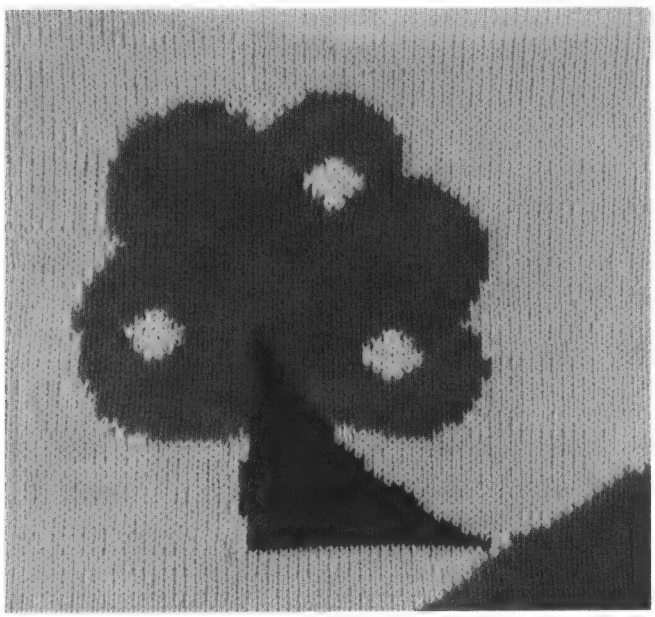
Colours in the L Knob Indicator alternate.

Blue — the current row will be repeated.
Red — the Punch Card moves to the next row and a new pattern row will be knitted next.

Work other operation in the same way as for other types of patterns.

The L Knob can also be used, if the Punch Card is suitable, for FAIR ISLE, WEAVING, SLIP STITCH and PUNCH LACE.

INTARSIA

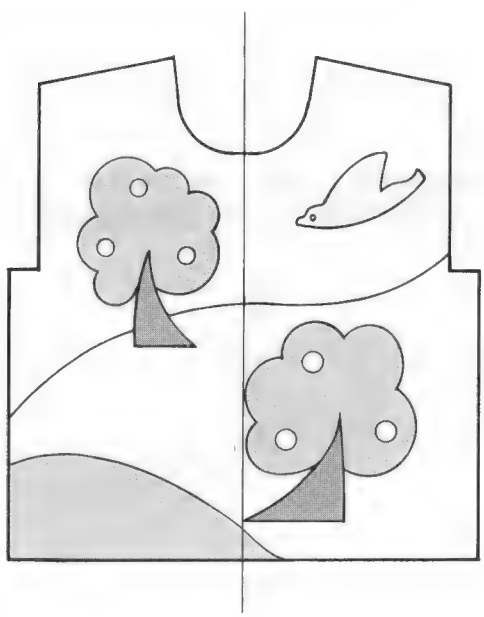


A practical method for knitting geometric or pictorial patterns without floats on the back of the fabric.

Prepare required number of yarn balls in each colour.

Drop the ribber to rest position, and use ribber needle bed covers (optional accessory) so yarns do not catch on ribber needles.

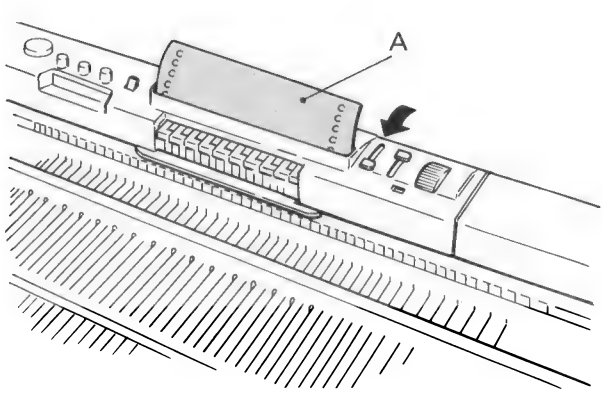
If the stitches drop or do not knit properly, remove the Ribber from the Knitter and set it in flat position while Intarsia.



If you have Mod.700, you can draw your own intarsia pattern on Pattern Paper for built-in Knit Contour (Radar).

If you have Mod.600, you can draw your own intarsia pattern on Pattern Paper for KR7 (optional Knit Contour).

As the wrong side is facing while you knit, draw patterns in reverse.

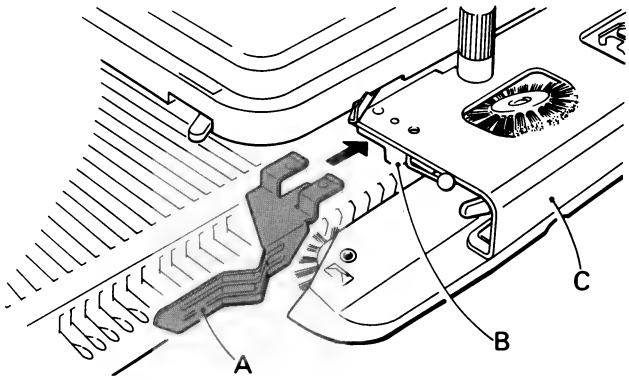


Cast-on and knit 10 rows of waste knitting in Stockinet.

Hang Claw Weights at both edges of the fabric.

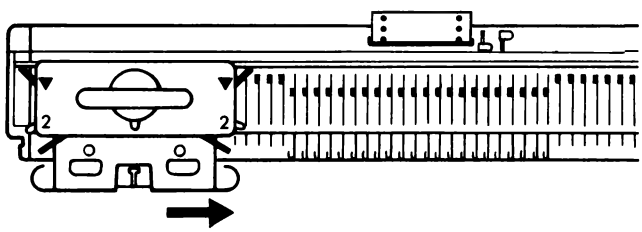
Knit with main yarn in Stockinet until the row before the Pattern.

Insert the Intarsia Card (short blank card) "A" and feed it leaving 3cm. above the card slot and set Stop Knob to ●.



Attach the Latch Guide A on both sides of the Arm only for intarsia pattern knitting to open the latches of needles in C position.
Insert the Latch Guide at both sides of the Arm as far as it goes.

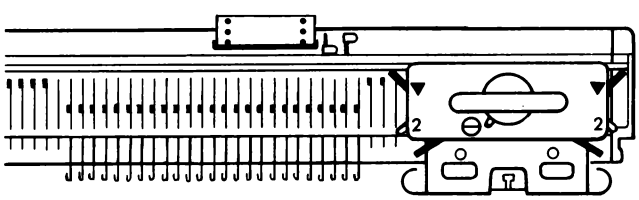
B — Weaving yarn feeder
C — Arm



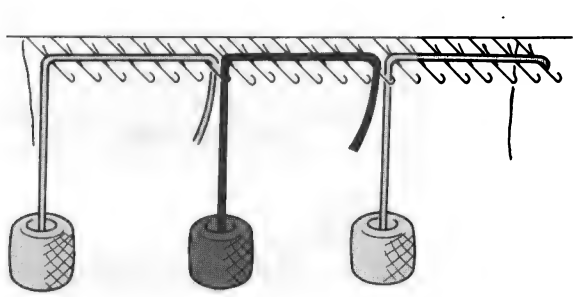
Set the both Intarsia Levers to 2.

Knit 1 row. (The needles will be aligned in C position)

Remove the yarn from the Yarn Feeder and Auto Tension, and place it on the floor.

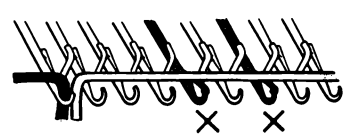


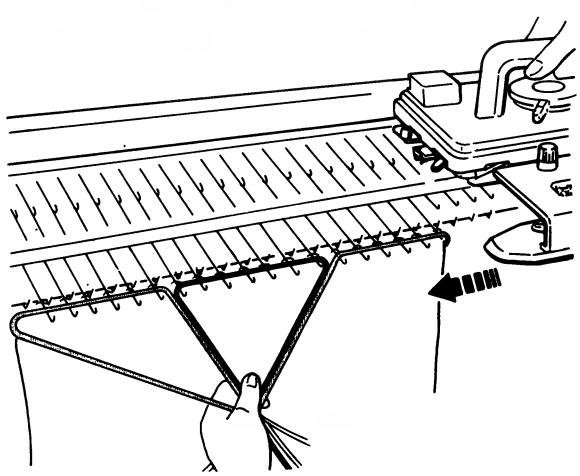
Set the Cam Lever to ⊖ (I).



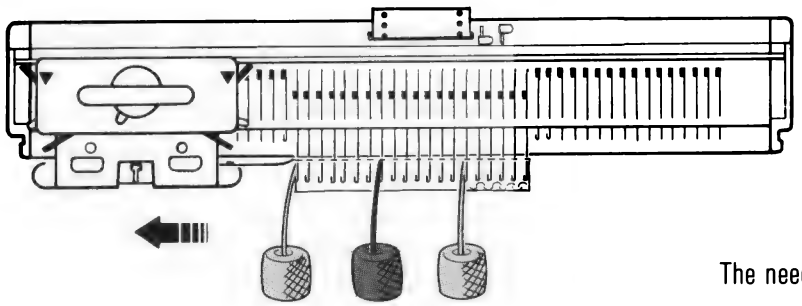
Following the Pattern on the pattern paper, lay yarns in the opened hooks starting from the Carriage side.

Make sure the latches of the needles are open before laying yarn.

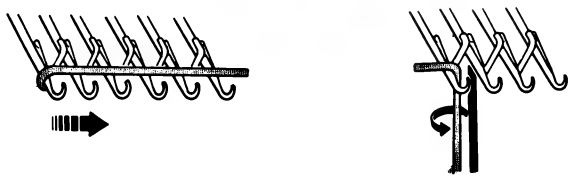




Holding down the yarns gently to take up slack from the yarns, move the Carriage slowly across the needles to knit the first row.

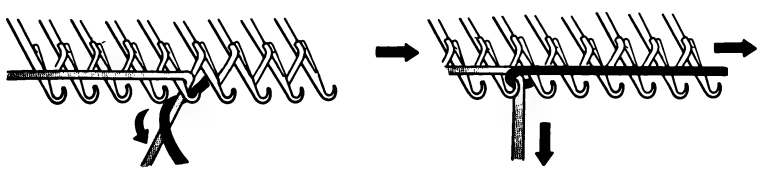


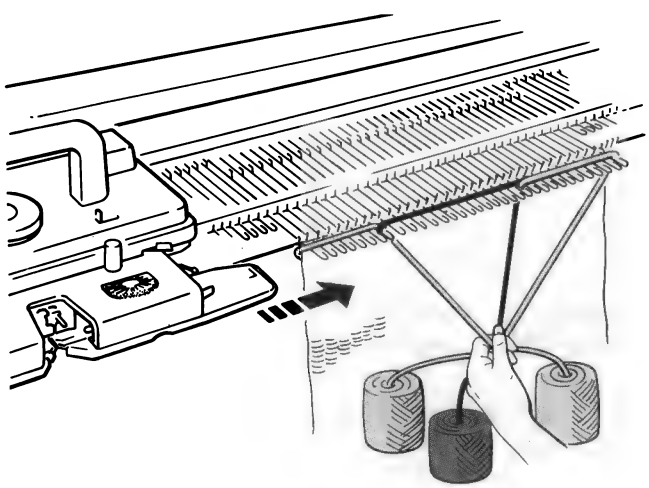
The needles align in C position.



Lay yarns in the needle hooks starting from Carriage side.

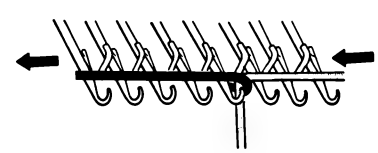
To avoid separation of stitches at the edge of each colour yarn, cross yarns as illustrated.

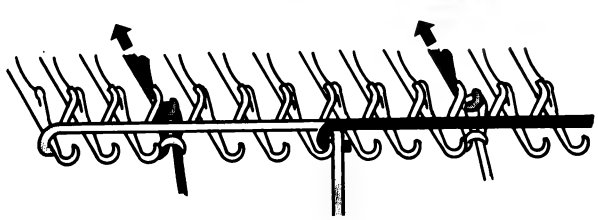




Holding the yarns gently only to take up slack from the yarns, move the Carriage slowly across the needles to knit the second row.

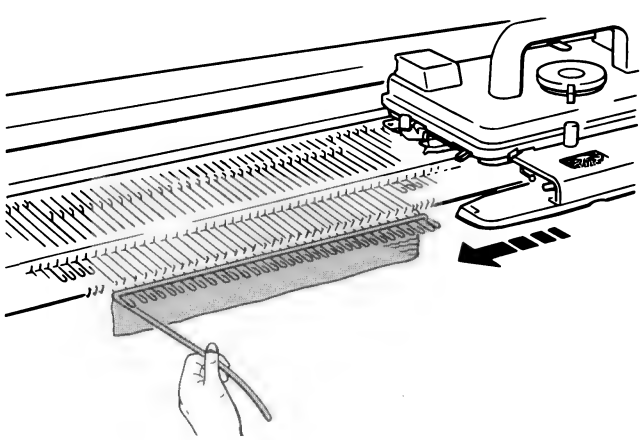
Continue knitting by laying the yarns in the needle hooks as for the first and second rows.





To knit only 1 or 2 stitches in one colour, lay the yarn on those needles and push them by hand back to B position.

Continue to knit by laying the yarns in the needle hooks, omitting the needles knitted by hand.



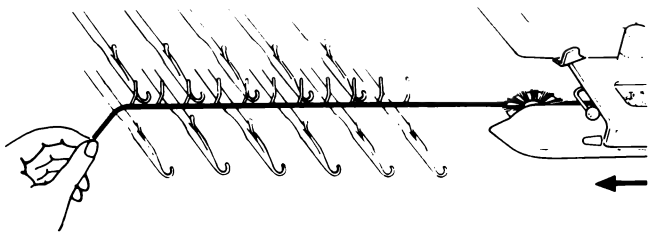
How to knit Stockinet

Set Intarsia Levers to 1, replace yarn in the Yarn Feeder and continue to knit, or lay the main yarn in hooks of the needles in C position and move the Carriage to knit a row with the Carriage setting for Intarsia.

To use Release Lever while Knitting Intarsia

While the Carriage is outside the working needles, set the Intarsia Lever to 1.
When the Carriage in on the working needles, move it slowly or the stitches may drop.

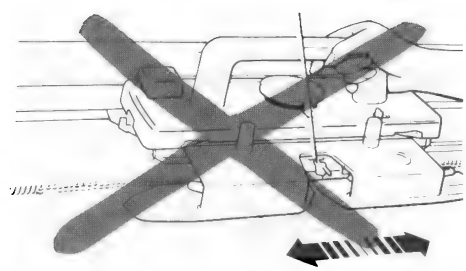
HELPFUL HINTS



If cast-on row does not knit properly:

Ensure that the yarn is free from the plastic Round Brush underneath the Arm.

If the yarn is touching the Round Brush, it will be caught in the Brush.

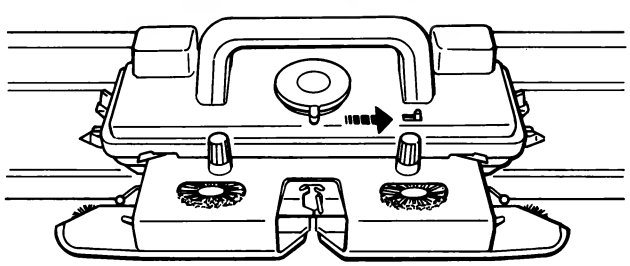


If the Carriage has jammed...

In the middle of the row, do not push the Carriage by force. Proceed as follows to release the Carriage from the jam.

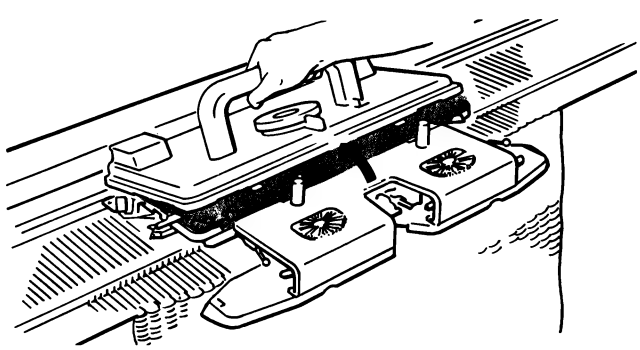
In pattern knitting, set the Stop Knob to ●. And remove the Magic Cams if they are in use, before moving the Carriage.

For Mod.600 Carriage, disengage the Row Counter Tripper.

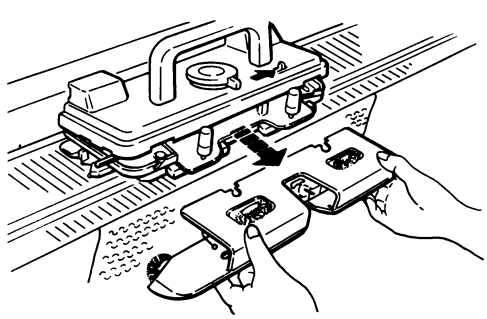


1. Remove yarn from the Yarn Feeder.

2. Push the Release Lever in the arrowed direction.

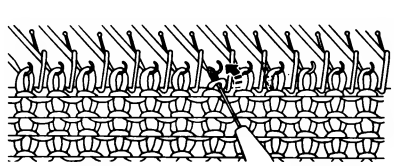


3. Lift the handle and move the Carriage in the same direction to clear the working needles.

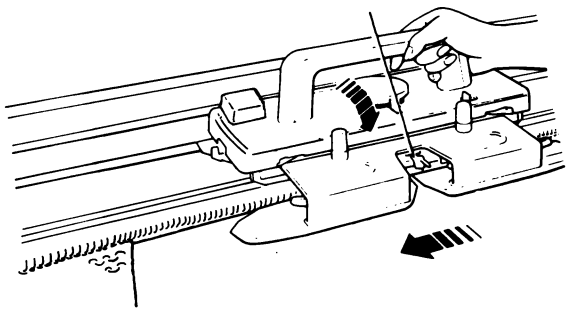


If yarn is entangled with the Yarn Feeder or Round Brushes, loosen the Arm Nuts and remove the Arm.

4. Pick up any dropped stitches. (see pages 44 — 45)
   Push back the needles in C or D position to B position replacing the stitches in the needle hooks with a Transfer Tool. Unravel the incomplete row and move the Carriage to the same side as the Yarn.



If the Punch Card is in use, memorize the pattern with the Carriage, with the Stop Knob at ●.
(see page 42~43)

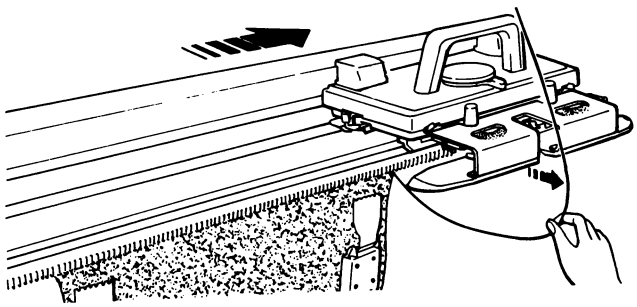


5. Push down the handle until it clicks.

   Make sure the Carriage is clear of the working needles.

   For Mod.600 Carriage, engage the Row Counter Tripper.

6. Insert yarn and continue knitting.

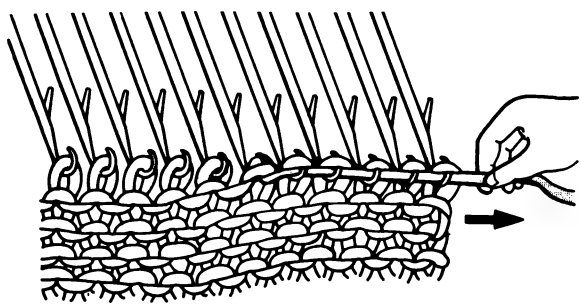


To unravel knitted fabric on the machine.

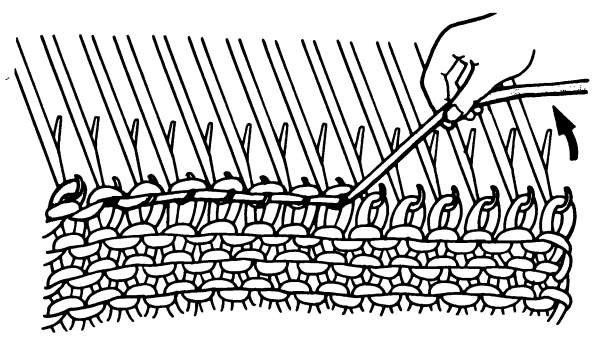
Remove the Carriage from the knitting before you start to unravel. (If the Carriage has jammed, see page 40.)

Remove yarn from the Yarn Feeder.

Hang the Claw Weights on both edges of the knitting.

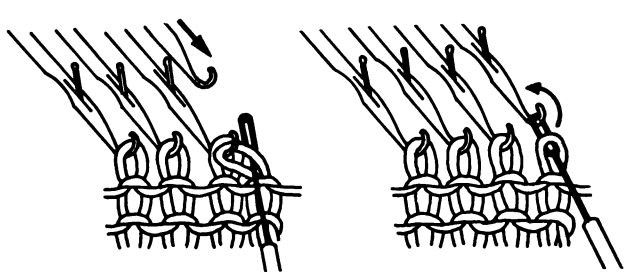


1. Holding the fabric downwards, pull the yarn sideways to tighten the stitches.



2. Lift the yarn upwards and very slightly backwards. The stitches of the previous row will slip back into the needle hooks.

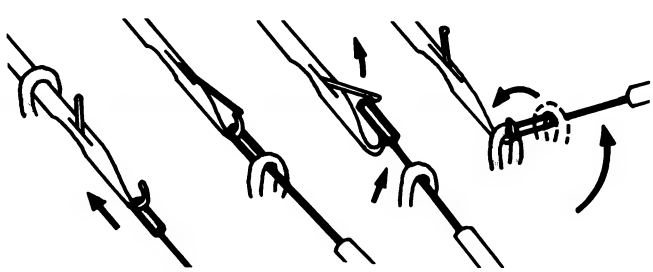
3. Align the needles in B position.



If the fabric has been shaped by decreasing or partial knitting.

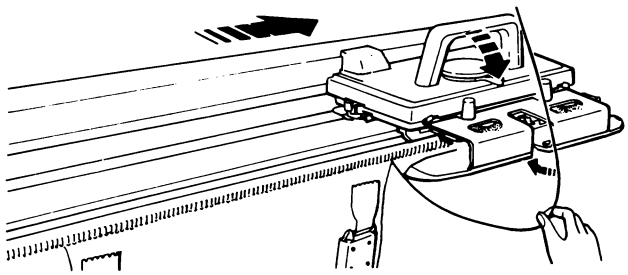
Fabric with decreased edge:

On the decreased edge, the end needle has two stitches. Place one stitch back on its original needle.

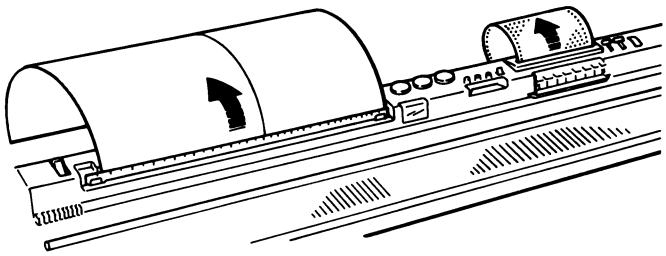


In the course of partial knitting:

Replace the stitches in the needle hooks. Push back the needles in D position to B position using Transfer Tool.

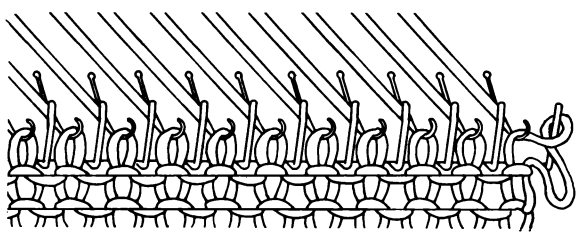


4. To continue knitting, pull the unravelled yarn down towards the yarn ball at the back of the Tension Rod, adjust the Row Counter, and replace the Yarn in the Yarn Feeder.



If using the Punch Card, wind back the Card by the same number of rows that you have unravelled, and memorize the pattern before starting to knit. (see pages 42 ~ 43)

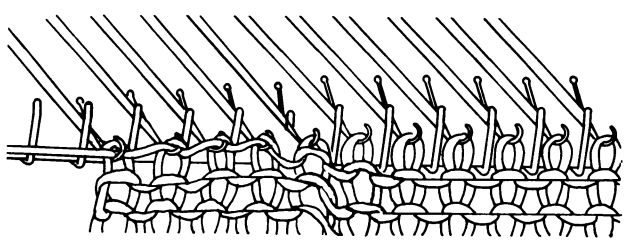
If using the Knit Contour, wind back the Pattern Paper before starting to knit. (see Knitting Manual)

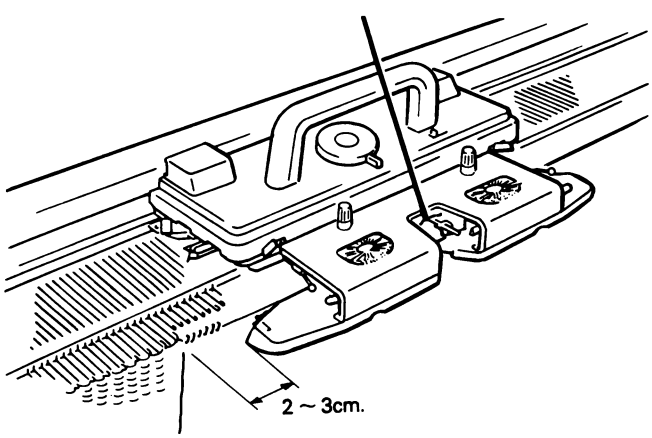


If stitches are dropped or knitted incorrectly

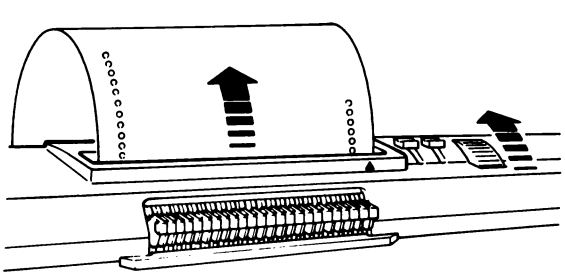
This can be caused by:
1. Faults in the yarn.
2. moving the Carriage too far past the edge of the knitting.

Reform dropped stitches using the Transfer Tool (see pages 44 ~ 45) or unravel the row incorrectly knitted. (see page 41)



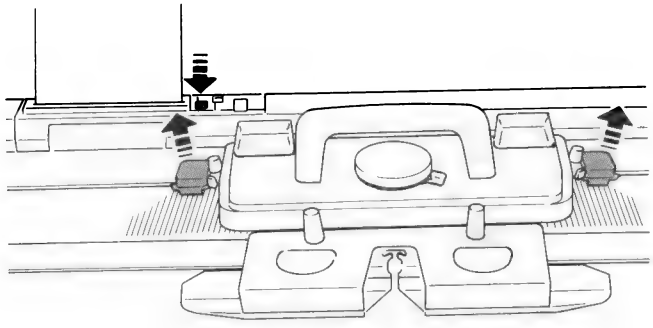


To continue knitting, ensure that:
1. You have passed the last knitting needle by approximately 2 — 3cm. before knitting the next row.
2. You move the Carriage at an even speed.
3. Yarn is in good condition, with no knots or faults.



To memorize the pattern

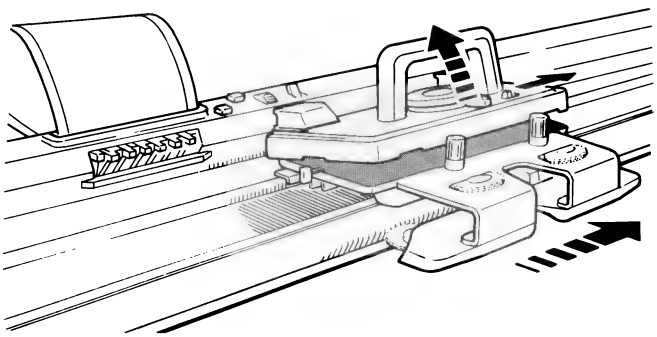
Memorizing the pattern is required when:
1. Carriage has been removed from the Needle Bed.
2. Unravelling has been done.
3. Yarn is entangled in Memory Drums at the back of the carriage.



After unravelling, return the Punch Card and Row Counter by the same number of rows as you have unravelled.

If using L KNOB, return the Punch Card ONLY HALF THE NUMBER of rows unravelled.

For example: 3 rows incorrectly knitted.
Unravel 4 rows.
Return the Card by 2 rows.

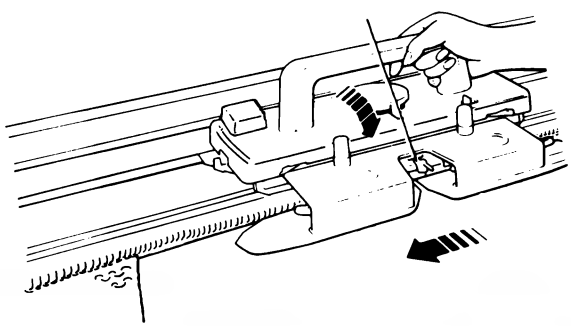


Set the Stop Knob to ● and remove the Magic Cams if they are in use.

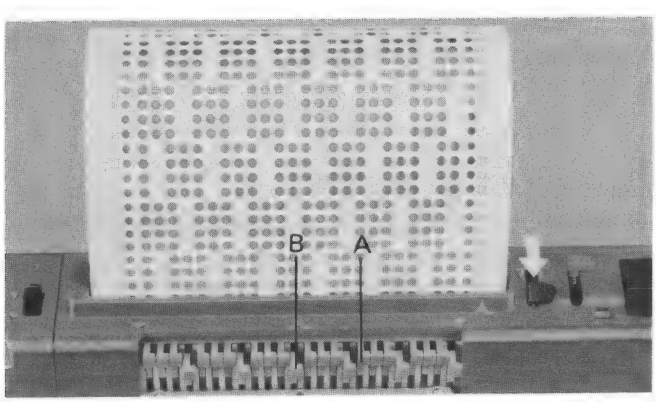
For Mod.600 Carriage, disengage the Row Counter Tripper.

Remove yarn from the Yarn Feeder.

Push the Release Lever to the right and with the Carriage Handle lifted, move the Carriage one or twice across the Needle Bed until it has passed the 24 needles in front of the touch levers. Finish with the Carriage at the same side of the knitting as the yarn.



Replace yarn in the Yarn Feeder and set the controls to their original positions.

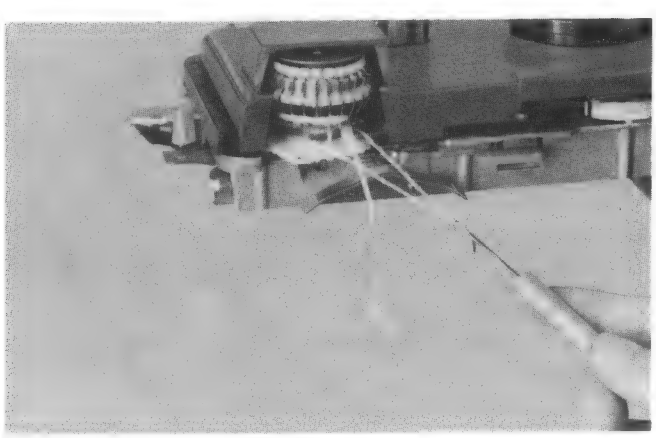


To check the pattern with the Card.

By setting the Stop Knob to ● the pattern of the row to be knitted next is shown by the Touch Levers.

To check the pattern on the previous row, return the Card by 1 row and set the Stop Knob to ●.

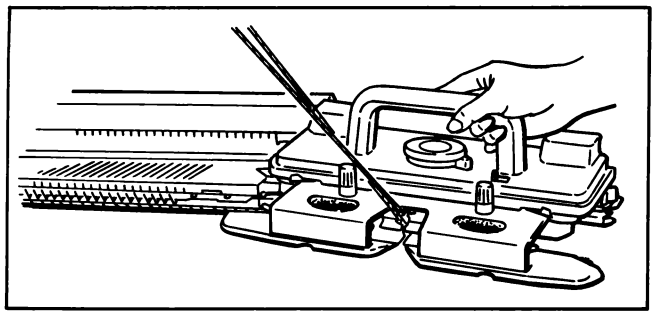
Touch Levers in the back position "A" show the punched area of the card.
Touch Levers in the front position "B" show the non-punched area of the card.



If yarn is entangled in Memory Drums...

If yarn does become entangled inside the Memory Drums, move the Carriage to the side of the Needle Bed and carefully remove the yarn using the Tappet Tool.

If this happens during pattern knitting, memorize the pattern with the Carriage, with the Stop Knob at ●.
(see pages 42 ~ 43)

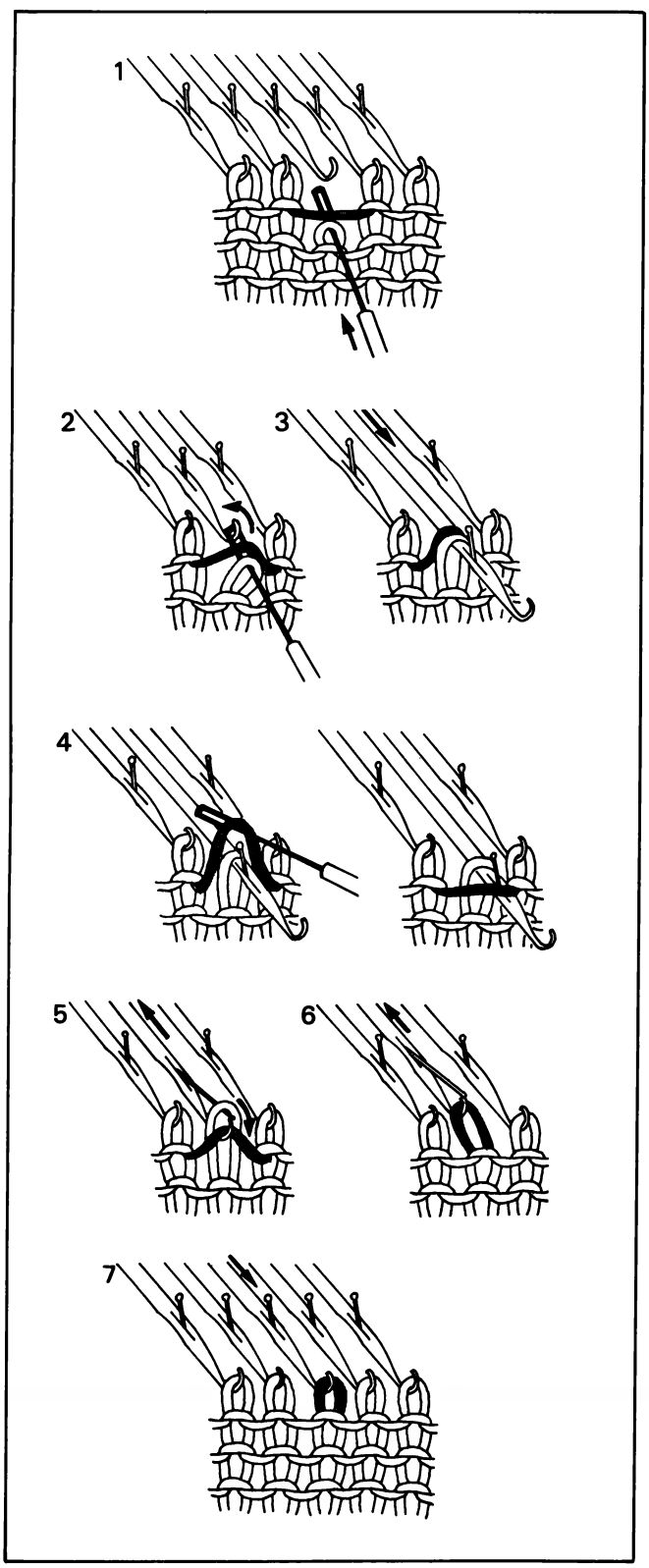


If the Carriage has been removed from the Needle Bed

Replace it on the Needle Bed by sliding the Carriage pipe onto the rail "B".

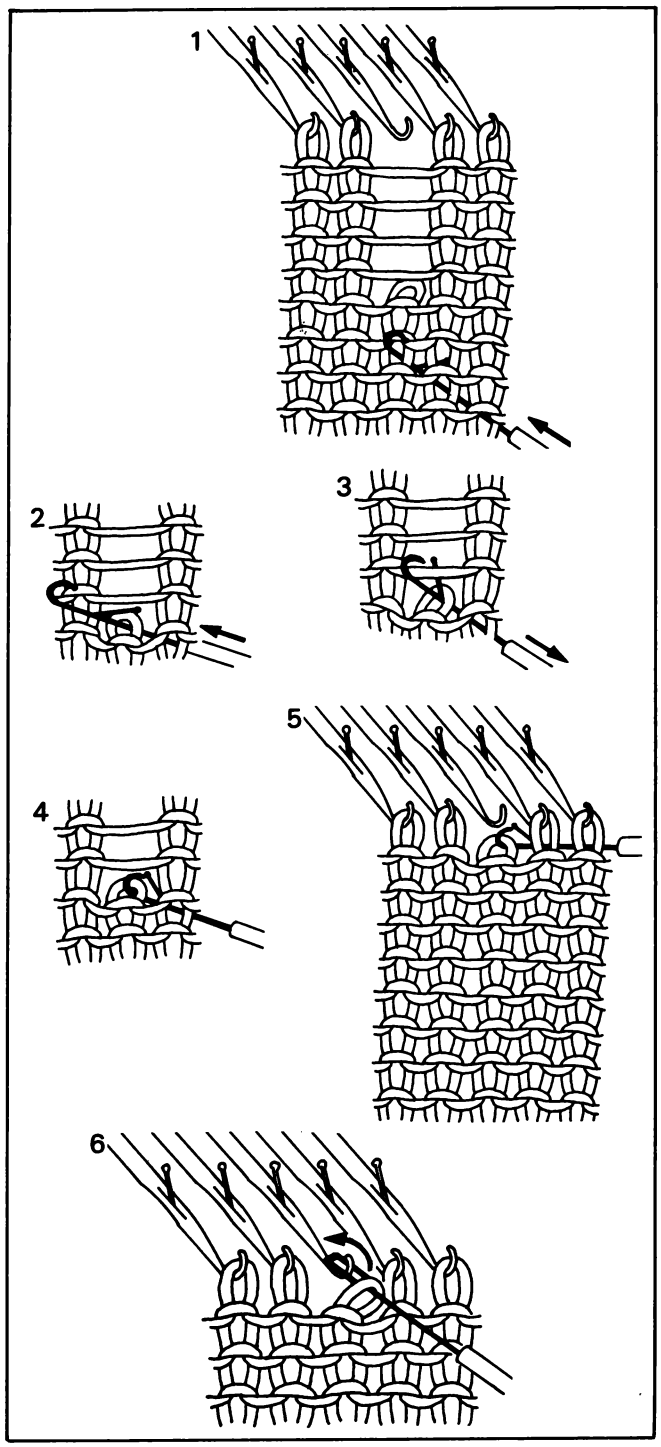
Ensure that the Carriage moves smoothly on the Needle Bed.

If the Punch Card is in use, memorize the pattern with the Carriage, with the Stop Knob set at ●. (see pages 42 ~ 43)



To replace a dropped stitch

1. Insert a prong of Transfer Tool into the dropped stitch.
2. Replace the stitch onto the empty needle together with the bar above the stitch.
3. Push forward the needle till both stitches move behind the latch.
4. Lift up the bar using the Transfer Tool and bring it in front of the latch.
5. Push back the needle till the stitch behind the latch slips off the needle.
6. Push the needles back to A position to correct the size of stitch.
7. Align the needle correctly in B position.



If a dropped stitch has run down for several rows...

1. Insert the Tappet Tool into a stitch a few rows below the dropped stitch from the rear side.

   Let the stitch run down to the Tappet Tool.

2. Push forward the Tool till the stitch moves behind the latch of the Tool.

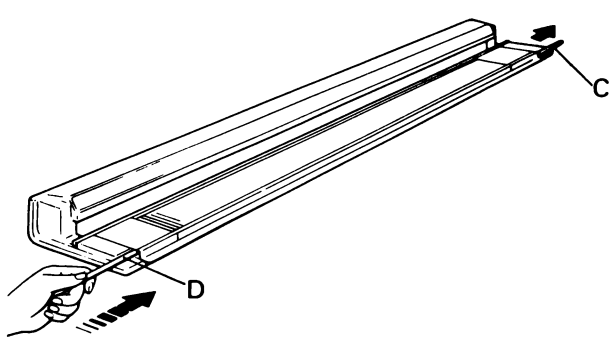
3. Pull the Tool back, catching the bar above.

4. The stitch behind the latch slips off the Tool and knits through the bar in the hook.

5. Repeat up to the top stitch.

6. Take the top stitch onto the Transfer Tool at the front, and replace it in the empty needle hook.

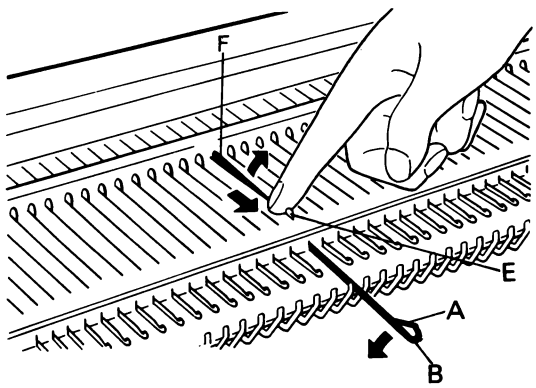
If one or more stitches have dropped or when in pattern knitting, it is usually easier to unravel the rows, rather than to repair the stitches.



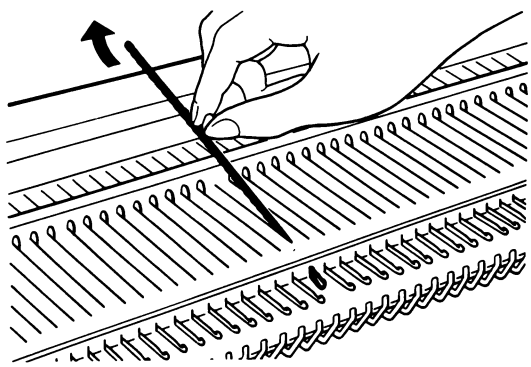
To replace a damaged needle

A needle with a damaged latch or a bent hook will cause incorrect knitting or dropped stitches.
The needle latch "A" must move smoothly and lie flat over the hook "B".

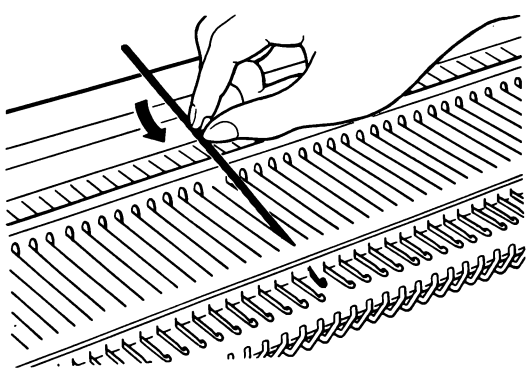
1. At each side of the Needle Bed, you can see the Needle Retainer "C".
   If the damaged needle is at the left of Needle Bed, move the Carriage to the right. Use a pencil "D" to push the Needle Retainer from the left.
   The Needle Retainer is then pushed out of the Needle Bed at the right end and you can pull it out of the Needle Bed until the damaged needle is free.



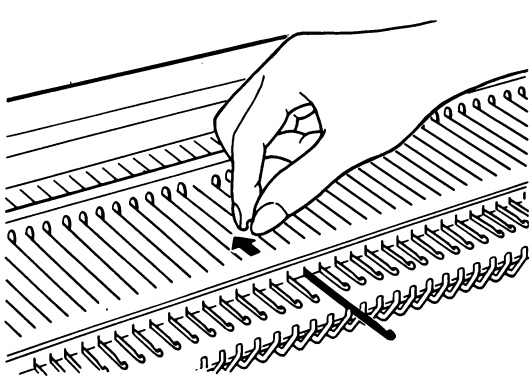
2. Push the damaged needle to D position by pressing its butt "E".
   Close the latch "A" and press the hook "B" down. The shank "F" will then come out of the needle groove.



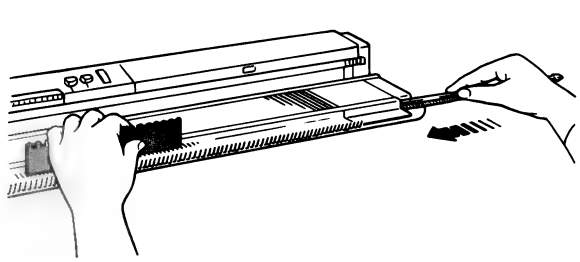
3. Lift up the needle by holding the butt and pull back to remove from the Needle Bed.



4. To fit a new needle, open its latch and slide it into Needle Bed slot until the hook comes out of the front of the Needle Bed.

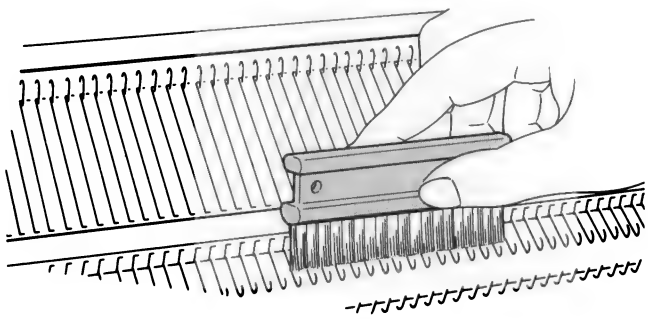


5. Push the needle back to A position by holding the butt.



6. Push the Needle Retainer back into the Needle Bed pressing floated needles down with flat side of the Needle Pusher.

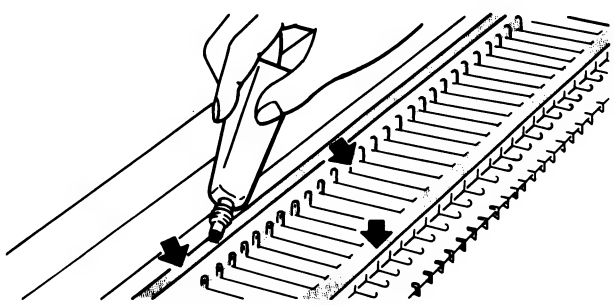
MAINTENANCE



To clean your Knitter, remove the Carriage from the Needle Bed.

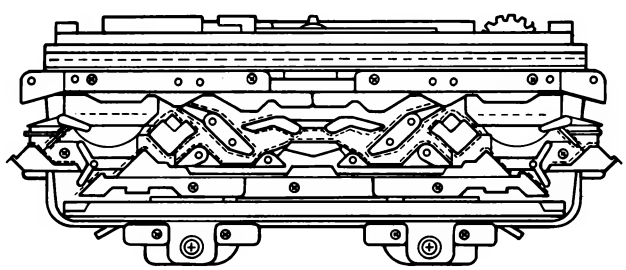
NEEDLE BED

Remove all fluff using the Cleaning Brush.



Apply oil along the rail and front guide of the Needle Bed.

With an soft, oiled cloth, wipe needle butts.

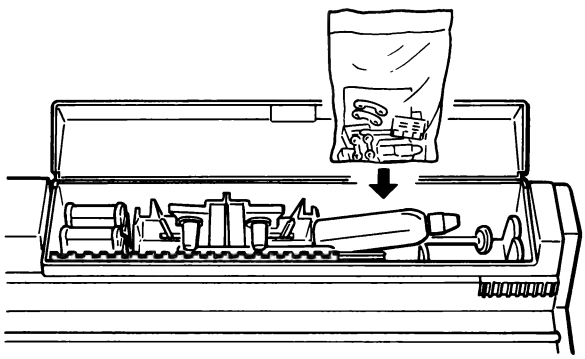


CARRIAGE AND ARM

Turn over the Carriage and brush off all fluff and oil from the metal parts, slider, Carriage pipe and Arm.

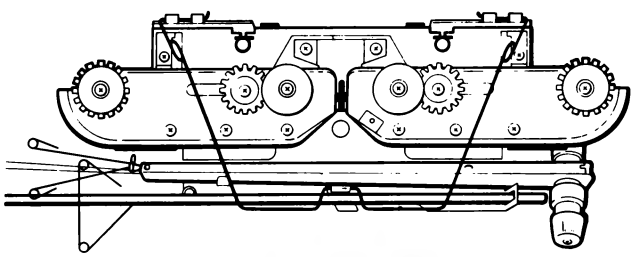
Replace the Carriage on the Needle Bed.

REPACKING THE MACHINE

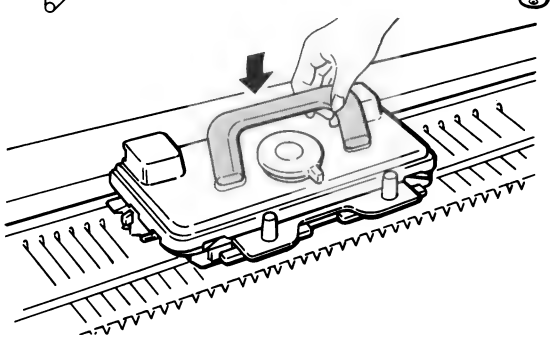


Replace the Accessories in the Accessory Box.

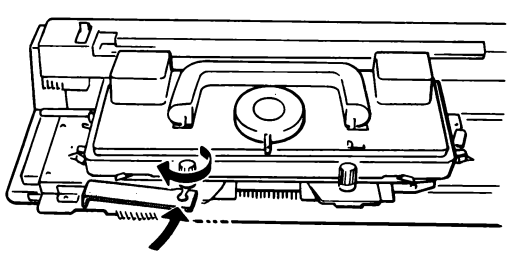
Remove the Punch Card from the Pattern Card Panel.
Do not fold or bend it.



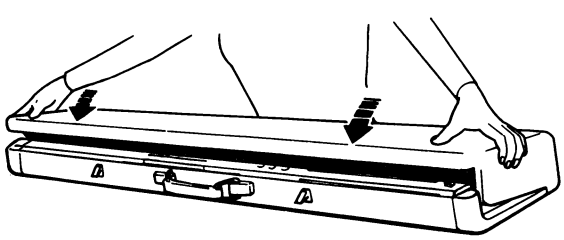
Remove the Auto Tension and Arm from the Knitter and pack them inside the Top Cover.



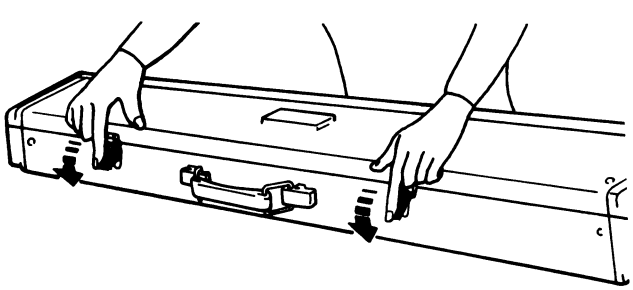
Lay the Carriage Handle down.



Secure the Carriage to the Needle Bed with the Carriage Fastener.



Place the top cover onto the Needle Bed.



Fasten the latches.

TO STORE THE MACHINE,

Keep the machine away from

1. too much moisture.
2. abnormal change of temperature.
3. salt or chemicals.

INSTRUCTION FOR LACE CARRIAGE

** The Lace Carriage is an optional **

It is recommended that you practice with the Main Carriage before strating to knit lace.

For setting up the Knitter and preparation of yarn before knitting, read the instructions on page 1 — 10.

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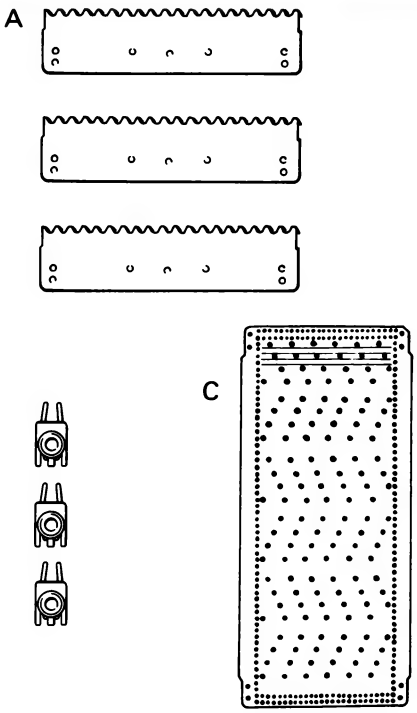
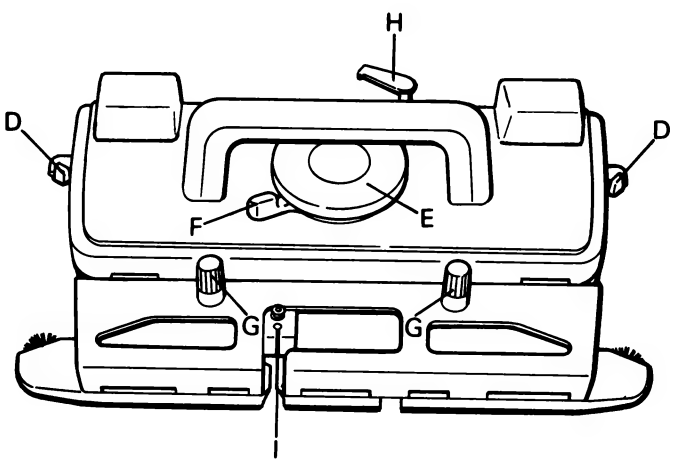
ACCESSORIES AND CARRIAGE



ACCESSORIES

Remove the Accessories from the packing.

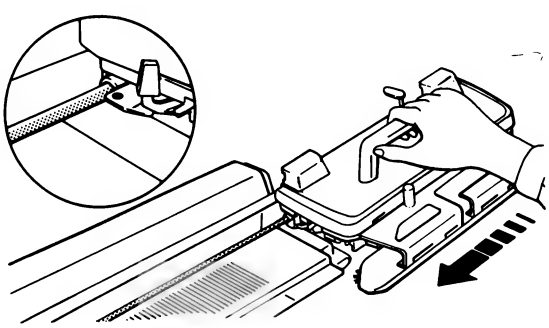
A — Wide Claw Weight (3)
B — Edge Pin (6)
C — Punch Card (10)



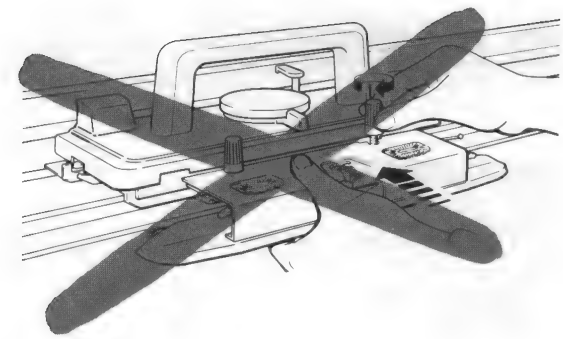
CARRIAGE

Lace Carriage and Arm has been packed in styrofoam packing. Remove it from the packing and raise the Carriage Handle.

D — Side Levers
E — Stitch Dial
F — Cam Lever
G — Arm Nuts
H — Row Counter Tripper
I — Yarn Feeder



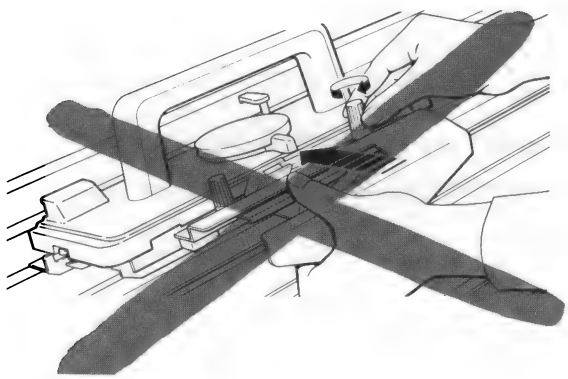
Place the Lace Carriage on the Needle Bed at the right side.



Note for using the Lace Carriage

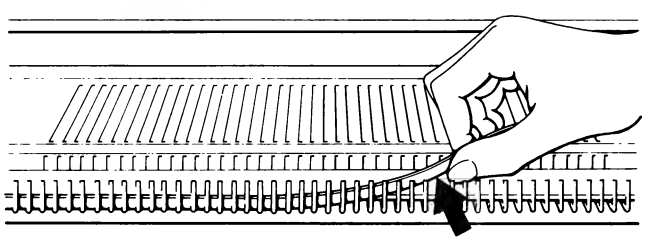
IMPORTANT:—

① ***Do not attach the Main Carriage Arm to the Lace Carriage.***



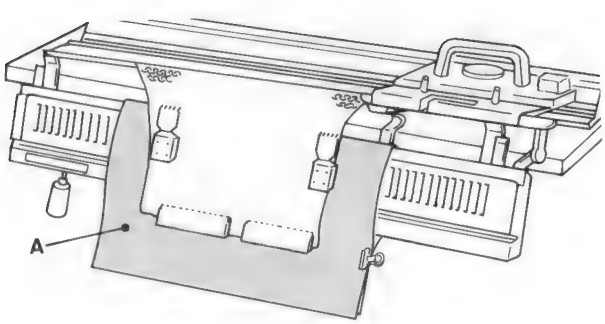
② ***Do not connect the Ribber Arm to the Lace Carriage.***

The Ribber Arm can only be connected to the Main Carriage.

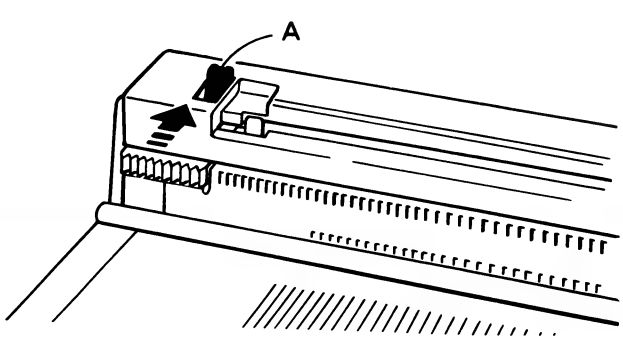


If you knit with Ribber connected,

* Set the Ribber at lower position.
* Remove the Close Knit Bar from the Needle Bed, if it is in use.

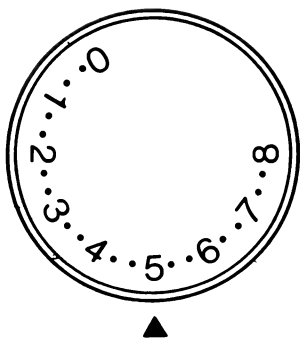


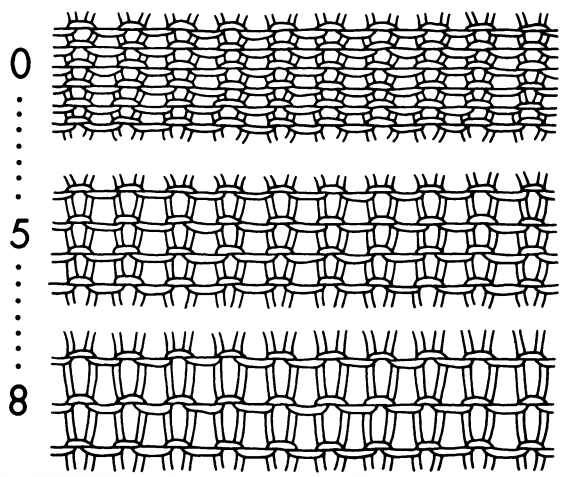
* With paper or cloth "A", cover the Ribber needles and sinker posts and bring the knitting in front of the Ribber.
(Plastic Ribber Needle Bed Covers are available as an accessory.)



If the Lace Carriage is used on the Mod.700 Knitter, be sure to set the Paper Lever "A" of the Knit contour to ▼ mark, otherwise it will interfere with the Row Counter Tripper.

YARN AND STITCH DIAL

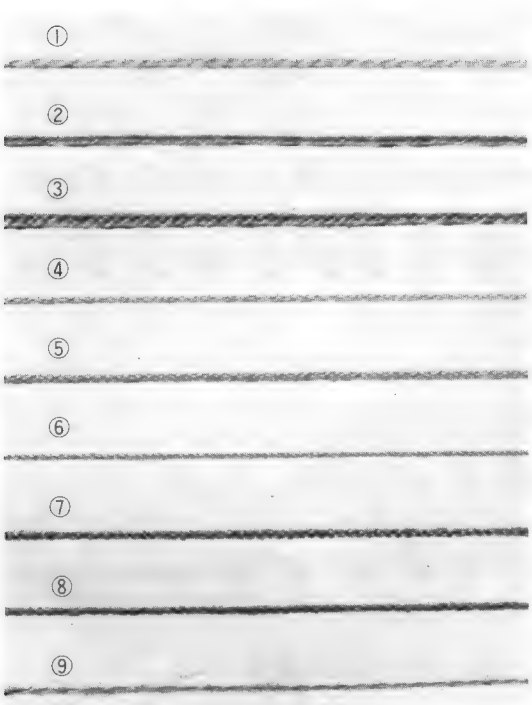




Stitch Dial

Use this to regulate the size of stitches.
Set the numbers to the ▲ mark at the front.

The higher the number on the Stitch Dial, the larger the stitch size (the fabric is loose).
The lower the number, the smaller the stitch (the fabric is tight).



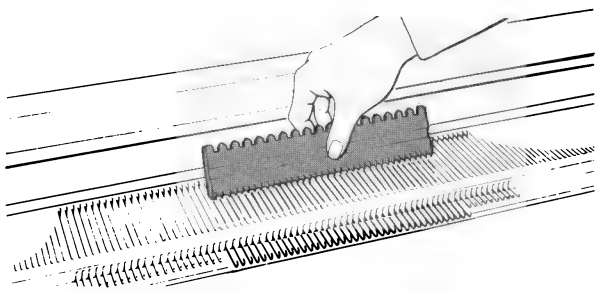
Yarn and Stitch Dial

Type of yarn	Stitch Dial (stockinet)	Stitch Dial (lace)
① Thin yarn (2-ply)	2 ~ 3	(3) ~ 4
② Light yarn (3-ply)	3 ~ 5	4 ~ 5
③ Medium yarn (4-ply)	4 ~ 6	5 ~ 6
④ Cotton thread (thin)	3 ~ 4	4 ~ 5
⑤ Cotton thread (regular)	4 ~ 5	5 ~ 6
⑥ Synthetic (thin)	2 ~ 3	(3) ~ 4
⑦ Synthetic (regular)	3 ~ 4	4 ~ 5
⑧ Synthetic (regular)	3 ~ 4	4 ~ 5
⑨ Mohair (thin)	3 ~ 5	4 ~ 5

Note:
Do not adjust the Stitch Dial to the numbers in brackets for Punch Card No. L-5, L-6 and L-7 which produce meshlike patterns.

Do not use heavy knop yarn or thick mohair yarn.

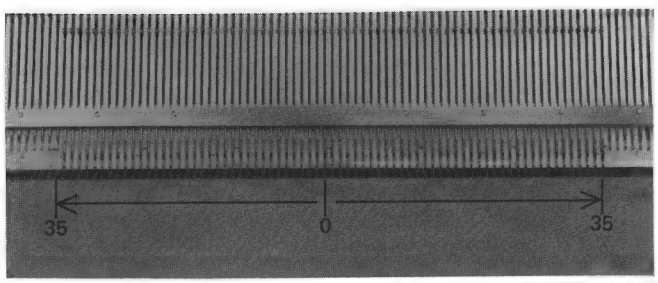
CAST-ON AND KNITTING

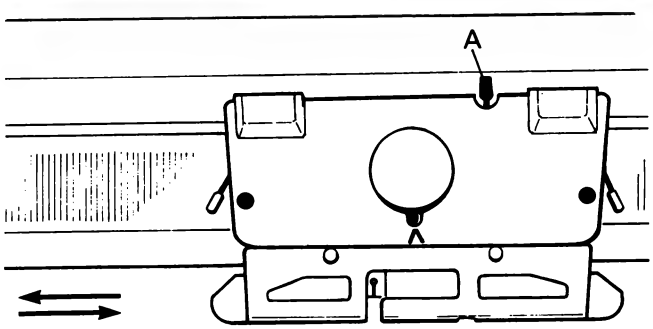


Cast-on

Push 35 needles at the left and right side of centre(0), (70 needles in total) from A to B position using the flat edge of the Needle Pusher.

Never push needles to C or D position.
The Carriage get stuck on the way and needles will be damaged.



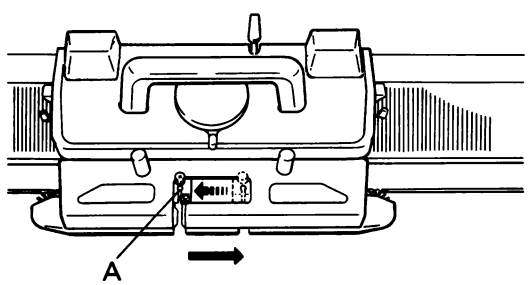


Cam Lever..... ∧
Side Levers..... ●

The Cam Lever is connected to the Row Counter Tripper "A".

Cam Lever position
∧ — Plain Lace.....Row Counter is operated.
⩓ — Fashion Lace.....Row Counter is not operated.

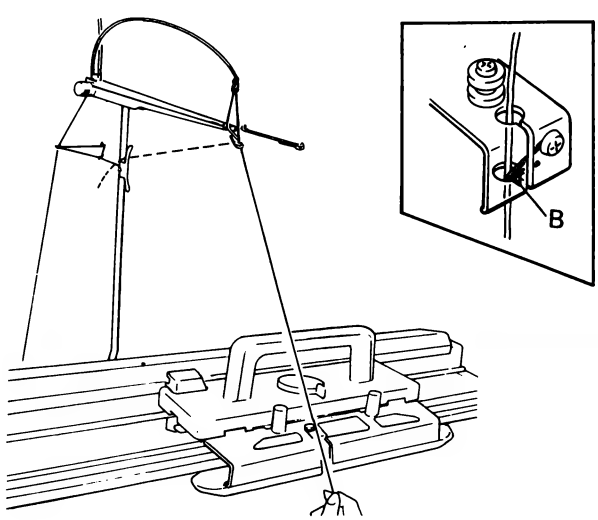
Do not adjust the Row Counter Tripper by hand.



Slowly move the Carriage across the Needle Bed until it has passed all the needles.

Place the Carriage at the right side.

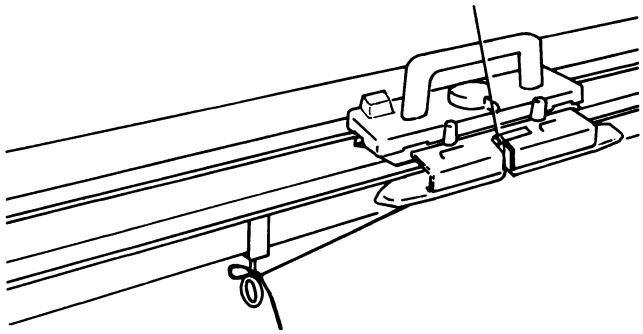
Move the Carriage to the right to move Yarn Feeder "A" to the left side of the Arm.
To thread up the Yarn, the Yarn Feeder, it must be at this position.



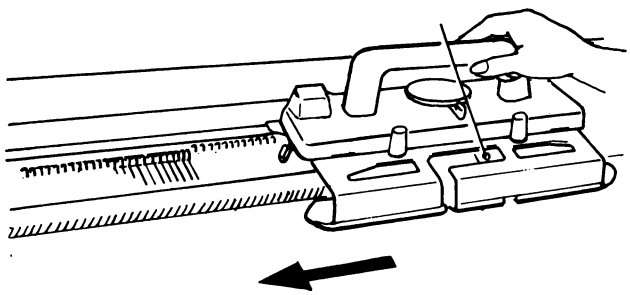
Remove the yarn end from Yarn Clip and bring it down to the Carriage.

Hold the yarn with both hands and slide it into the Yarn Feeder.

The yarn must be pushed behind guide pin "B".

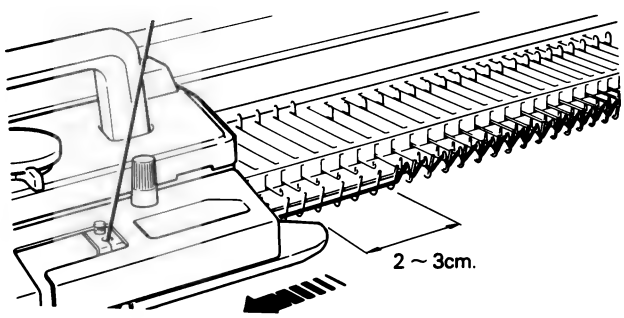


Fasten the yarn end to the clamp nearest the Carriage.

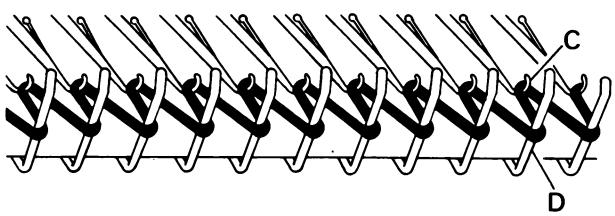


Eliminate slack yarn by pulling the yarn down at the back of Yarn Rod.

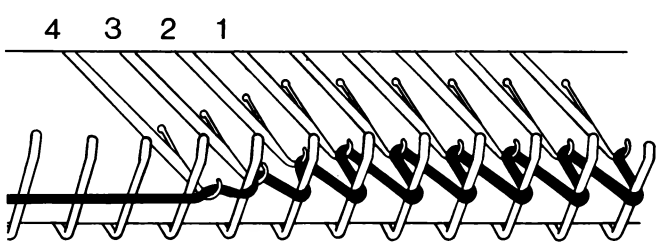
Slowly move the Carriage from right to left until it has passed all the needles in B position.



Be sure to take the Carriage past the last knitting needle by 2 —3cm.

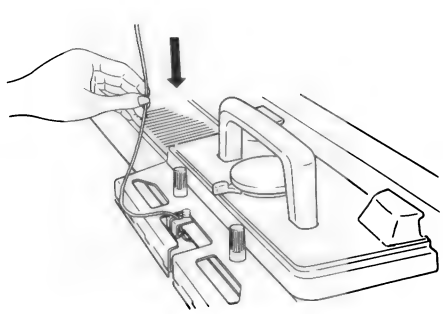


Even loops have been formed between needle hooks "C" and sinker posts "D".

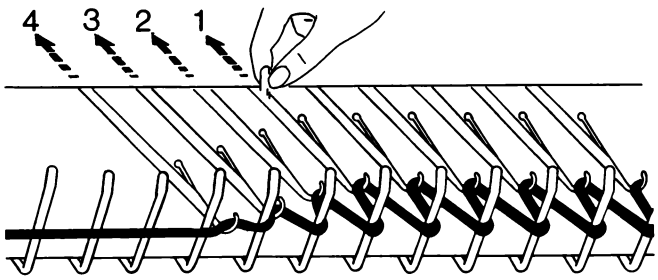


When knitting the first row, the loops may get smaller towards the edge.

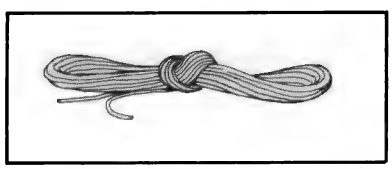
To achieve a succesful cast-on, these smaller loops must be increased in size.



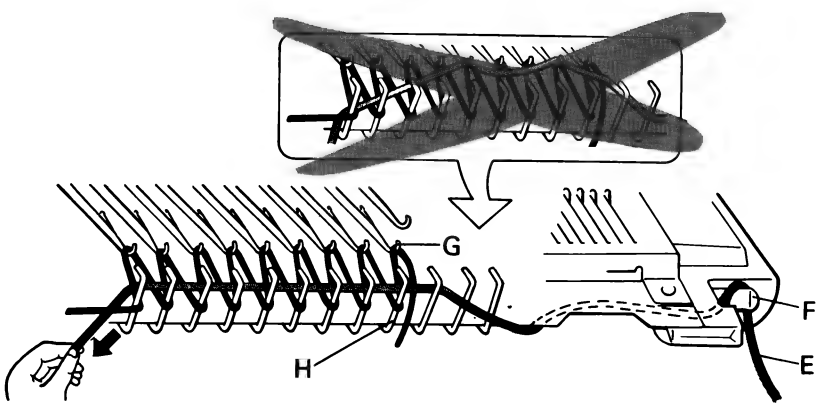
To correct, hold yarn above the Yarn Feeder and pull it down to allow some slack.



Starting with needle "1", push the needles with small loops one by one back to B position.

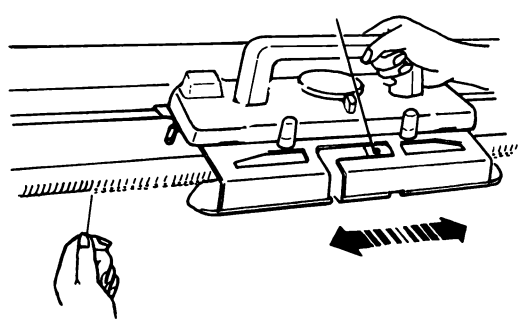


Take the Ravel Cord from the accessory box, and undo it.
Make sure that there are no knots in the cord.



Place the end of the Ravel Cord "E" in the clip "F" at the right end of needle bed as shown.
Lay the Ravel Cord across the yarn loops between needle hooks "G" and sinker posts "H".
Pull the Ravel Cord with the left hand.

Ensure that the Ravel Cord lies correctly across the loops and is not caught in the needle hooks.

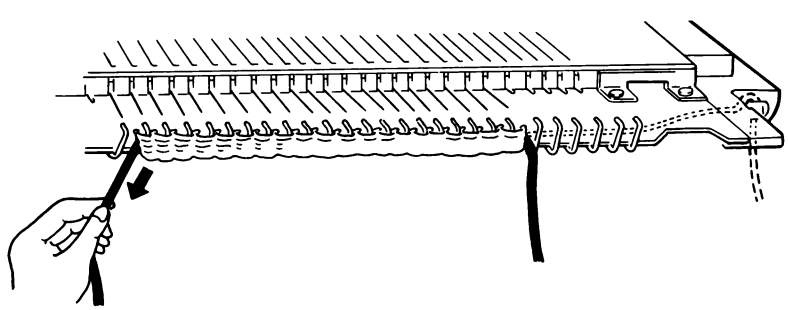


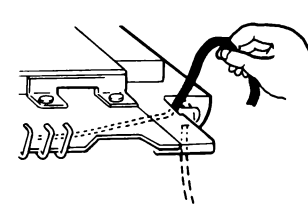
While pulling down the left end of the Ravel Cord, move the Carriage to the right side.

Continue to knit 5 — 6 rows.

Release the end of the Ravel Cord from the clip and pull it out from the left.

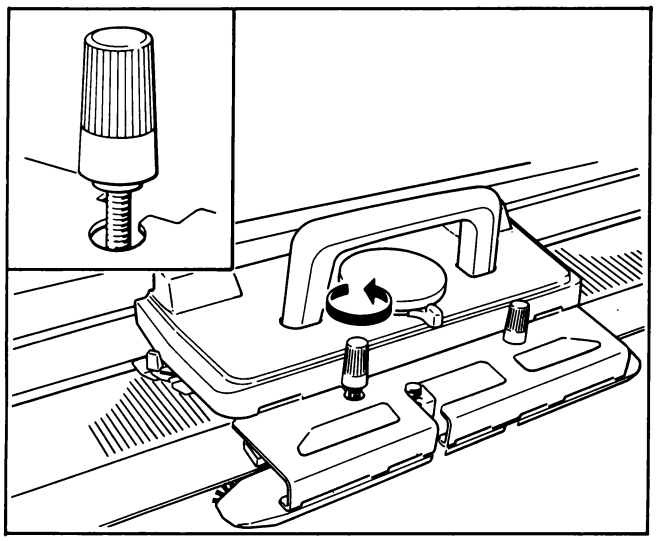
Cast-on has been finished.





Knitting Stockinet

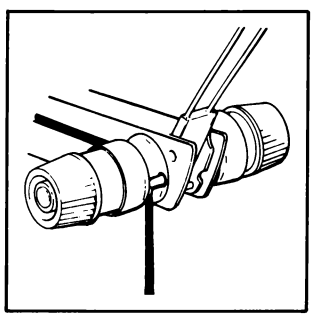
Remove yarn end from the clamp.
Move the Carriage from side to side to knit Stockinet.

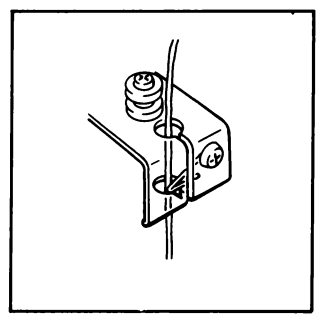


Check Points

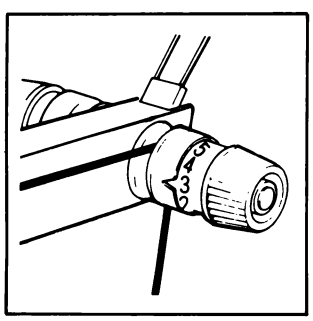
If you have any difficulty in knitting the first row, ensure that...

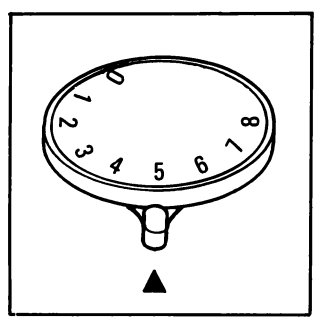
Arm is attached to the Carriage correctly.



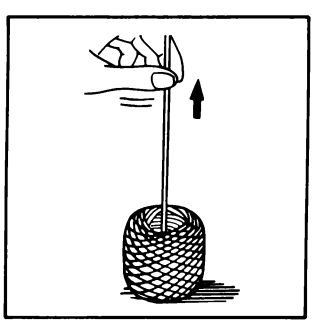


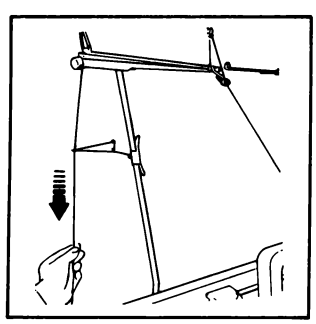
Yarn is threaded correctly through the Auto Tension and Yarn Feeder.





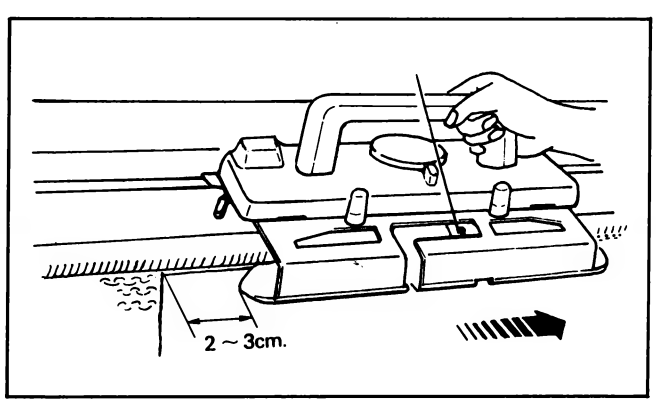
Tension Dial, Stitch Dial and Cam Lever set correctly.



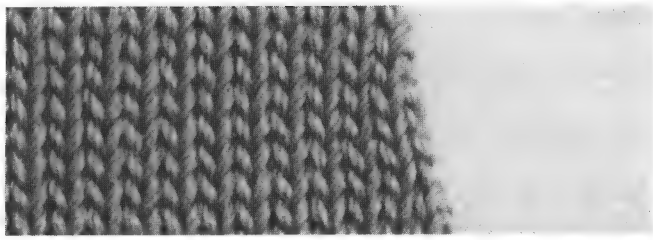


Yarn is wound correctly.

Slack yarn is eliminated and Tension Spring is almost horizontal.



Arm has passed the working needles by approximately 2 — 3cm. before beginning the next row.

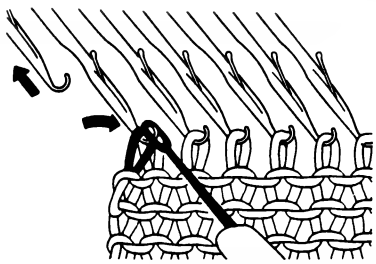


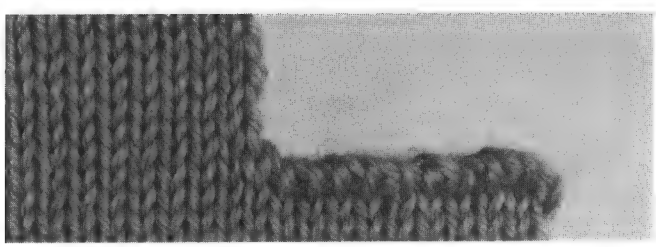
Decreasing 1 stitch

You can decrease 1 stitch at both sides of the same row.

Using the Transfer Tool, transfer the end stitch onto the adjacent needle.

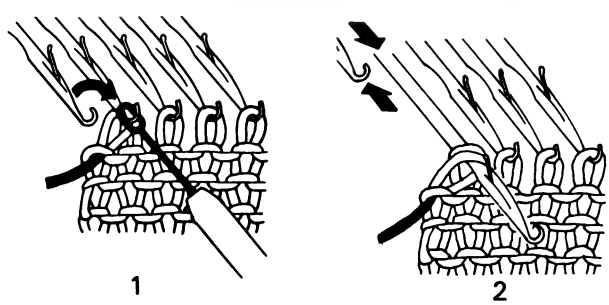
Push the empty needle back to A position.





Decreasing multiple stitches

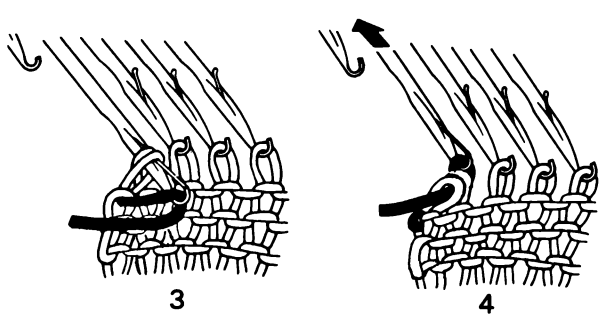
You can decrease only on the Carriage side.



To decrease at the left:—

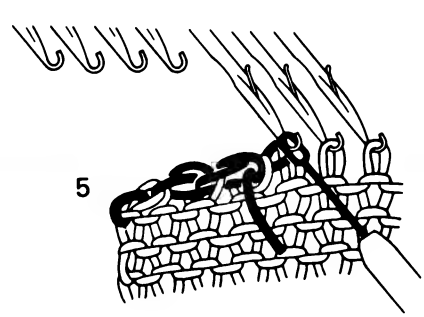
1. With the Carriage at the left, hold the fabric back towards the Knitter.
   Transfer the end stitch to its adjacent needle.
   Push the empty needle back to A position.

2. Push the second needle to D position until both stitches are behind the latch.



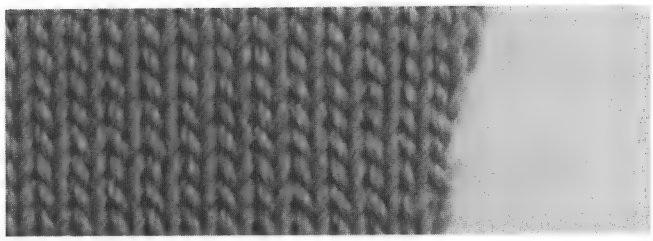
3. Lay yarn from left to right in the open hook of the needle. (When decreasing at the right edge, lay yarn from right to left.)

4. Hold yarn slightly down. Push the needle back to B position. The two stitches slip off the needle, leaving a new stitch.



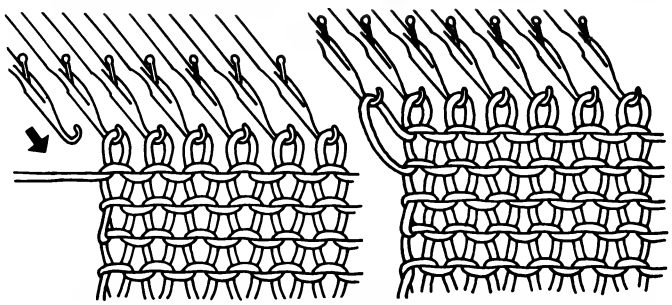
5. Continue the same procedure until the required number of stitches have been decreased.
   Place the last decreased stitch onto the adjacent needle.

* Repeat in reverse to decrease at the right.

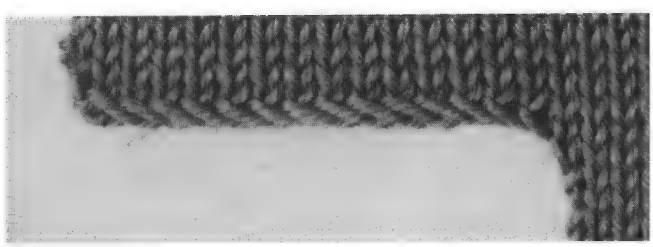


Increasing 1 stitch

You can increase 1 stitch at a time only on the Carriage side.

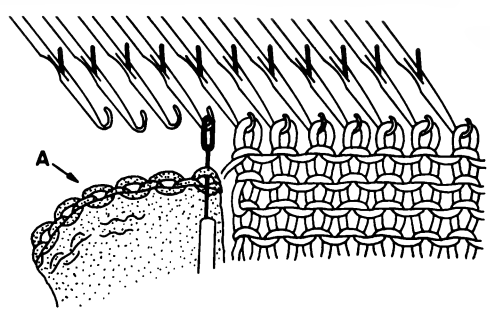


Push 1 needle on the Carriage side from A to B position.

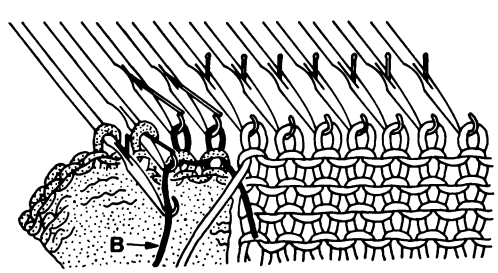


Increasing multiple stitches

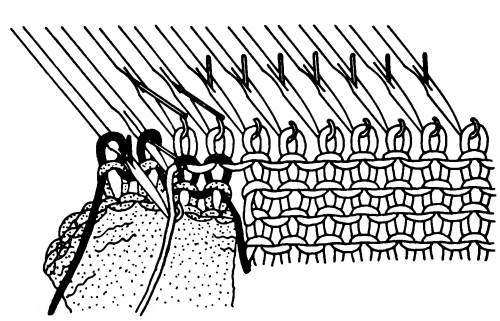
You can increase only on the Carriage side.



1. Push the required number of needles for increase from A to B position.
   Take a piece of waste knitting, and using the Transfer Tool, pick up stitches from it and hook them on the needles.

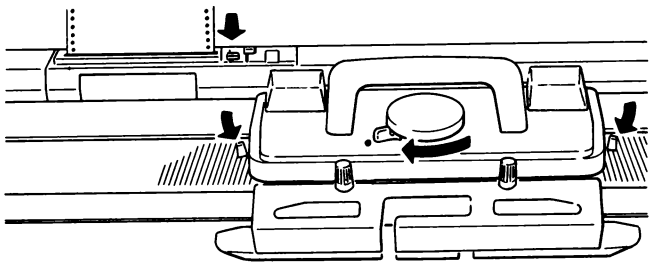


2. Push the needles from B to D position and lay the Ravel Cord "B" on needle hooks.
   (Stitches of the knitted piece are behind needle latches.)
   Push the needles one by one and form loops.



3. Push the needles from B to D position and lay the main yarn on the needle hooks.
   Push the needles one by one and form loops in the same manner as done for the Ravel Cord.
   Knit the required number of rows.

4. Before removing Ravel Cord, back stitch (see Knitting Manual) through stitches immediately above Ravel Cord.

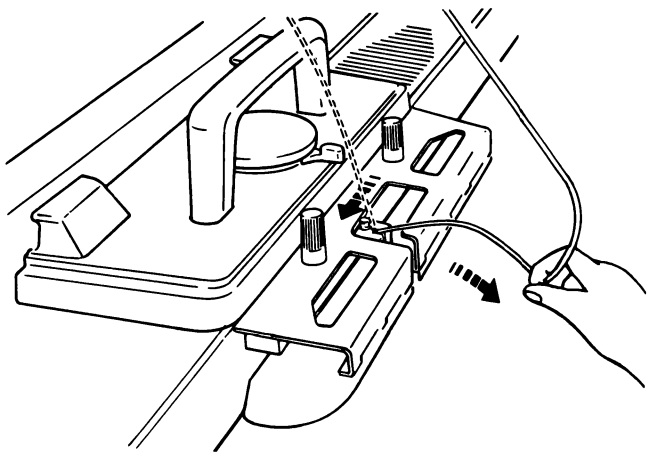


Moving the Carriage without Knitting.

Remove the yarn from the Yarn Feeder.

Side Levers..... ●
Cam Lever..... ⩚

Move the Carriage across the fabric.

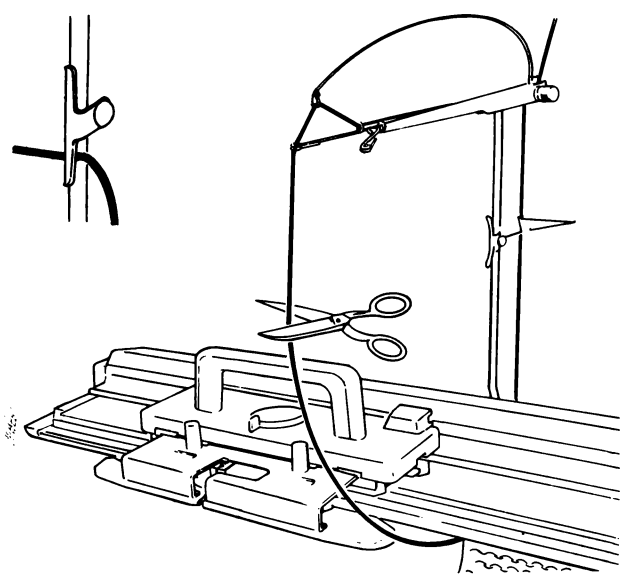


Removing knitted fabric

— without casting off —

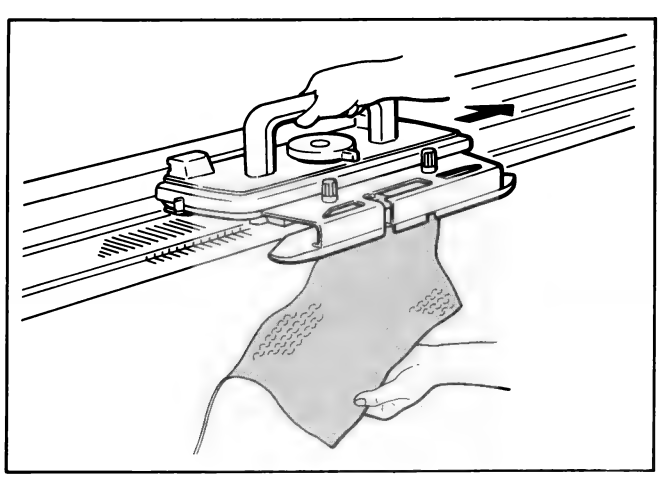
This is useful for removing tension swatches and samples quickly.

Move the Carriage a little way to the right. Place the Yarn Feeder at the left side and remove the yarn by pulling it towards you.



Hold the yarn between the Carriage and Tension Spring and cut it.

Place the yarn end into the Yarn Clips.

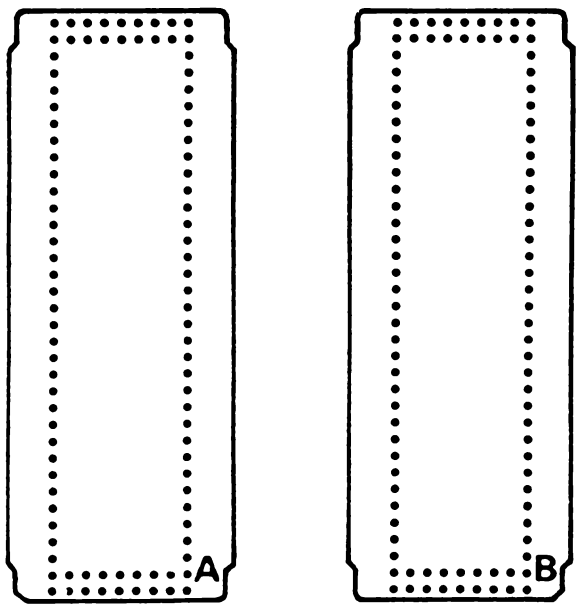


Remove weights from the fabric.

Set Cam Lever to "Λ" and move Carriage across the fabric.

The fabric comes off the needles.

PATTERN KNITTING WITH LACE CARRIAGE



Standard Punch Card for Lace Carriage

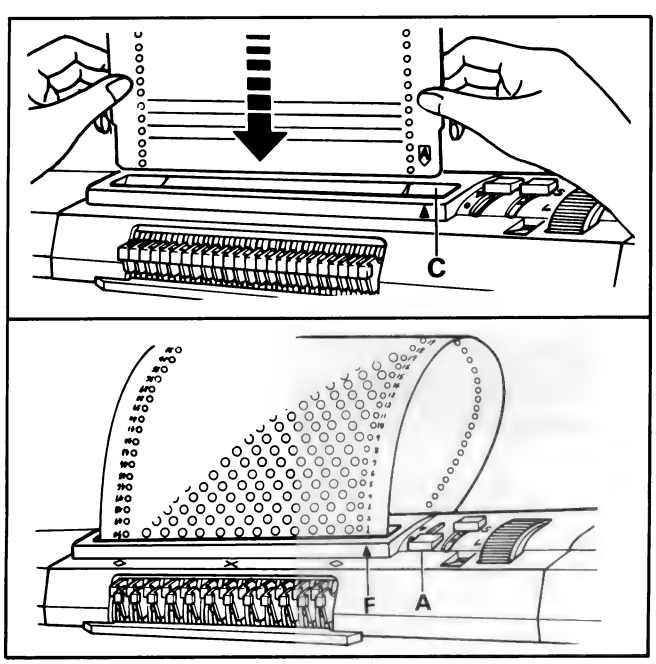
10 Punch Cards are numbered L-1 ~ L-10.

Punch Cards No. L-1 ~ L-8 are for plain lace.
Each Punch Card can be used in two ways and is marked "A" and "B".

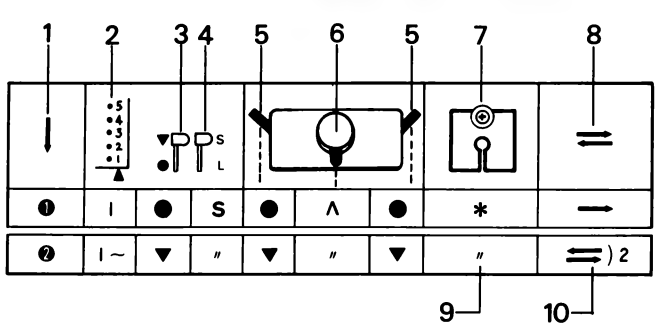
If "A" or "B" side of Punch Card is inserted into the Pattern Card Panel, direction of pattern can be changed.

Punch Card No. L-9 and L-10 are for fashion lace.
Only "A" side can be used.

Important: Do not fold or bend the Card.

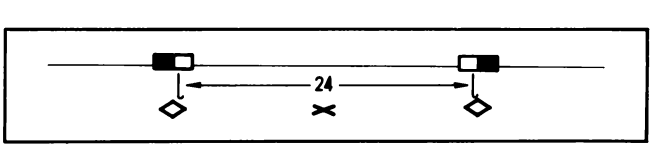


Setting up Pattern Panel — see pages 20 ~ 21.



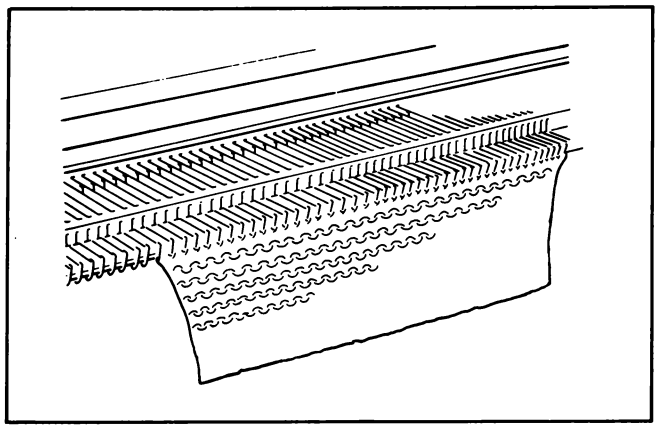
Reading Operation Table

1 — Order
2 — Card Memory Number
3 — Stop Knob
4 — L Knob (always set at "S" while lace knitting.
5 — Side Levers
6 — Cam Lever
7 — Yarn Feeder
8 — Knitting direction
9 — * mark shows yarn is in the Yarn Feeder
10 — the required number of rows should be knitted.



Point Cam M setting.

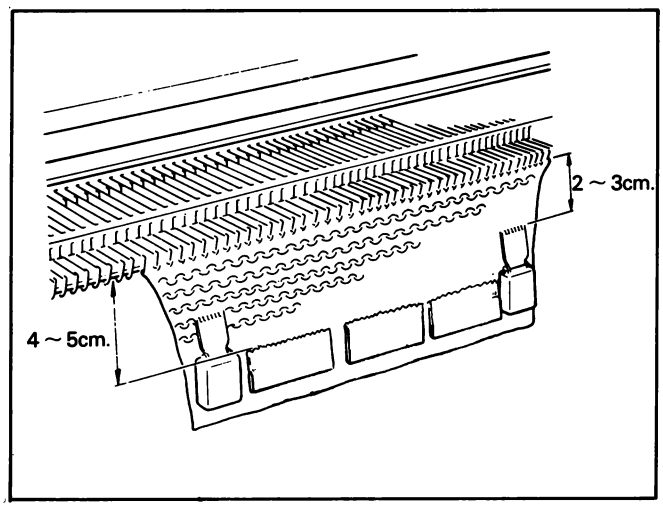
Place the Point Cams on the indicated positions of the Needle Bed.
Figure on the Operation Table shows the number of needles between the Point Cams.



Caution on Lace Knitting

Before beginning lace knitting, knit about 30 rows in Stockinet.

When you use A side of the Punch Card, place the Carriage at the left side of the Needle Bed. To knit 1 row to memorize the pattern.

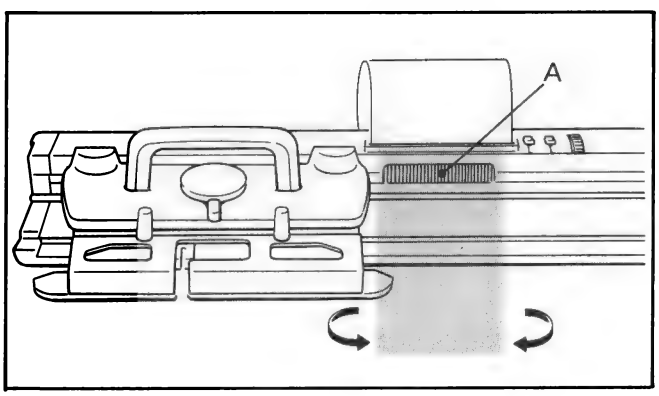


Hook Wide Claw Weights on the knitting approximately 4 —5cm. down from the Needle Bed.

Hook Claw Weights at both edges of the knitting approximately 2 — 3cm. down from the Needle Bed.

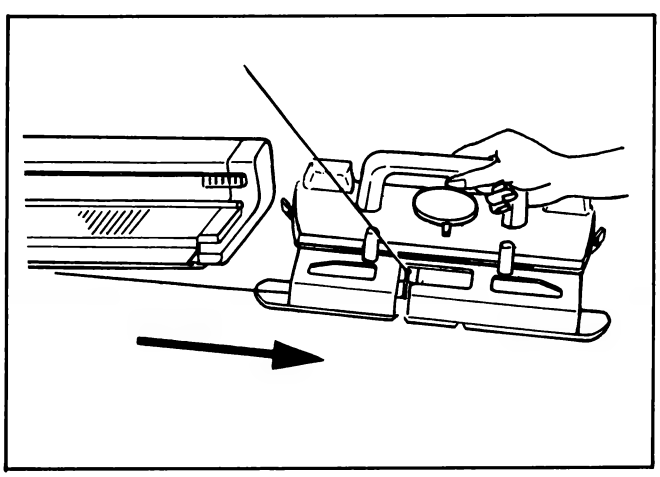
Move the Weights up as knitting progresses.

While Lace knitting, do not set the L Knob to L.

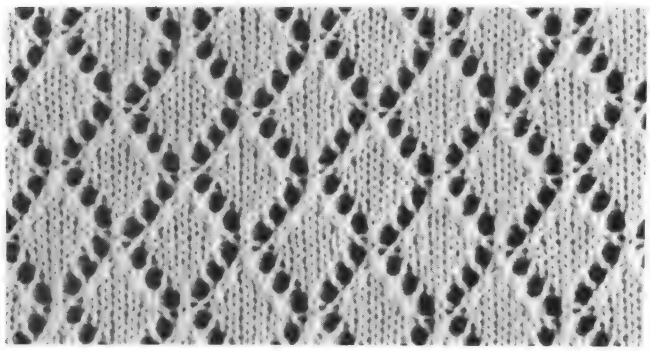


Make sure that the Carriage has passed the 24 needles in front of the Touch Levers "A".
Move the Carriage at an even speed.

Do not remove the Carriage from the Needle Bed when the Punch Card is being used.

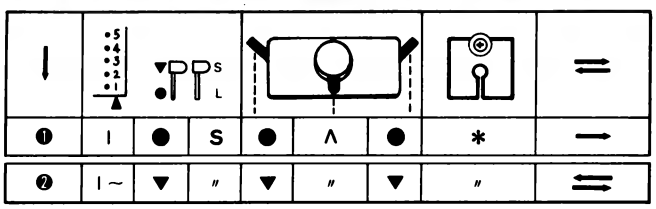


If the Carriage has been removed from the Needle Bed by accident, see pages 68 ~ 69 for adjustment.



The stitches are transferred by the Carriage during knitting.

The sample is knitted with Punch Card No. L-1-A.

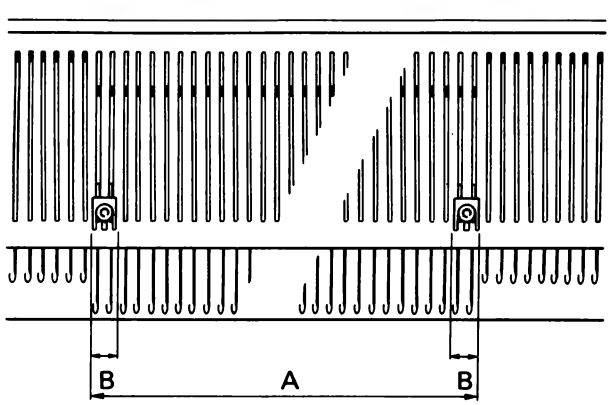


Use the Wide Claw Weights and Claw Weights.

Set the controls as required in ORDER ❶.

Knit 1 row from left to right.

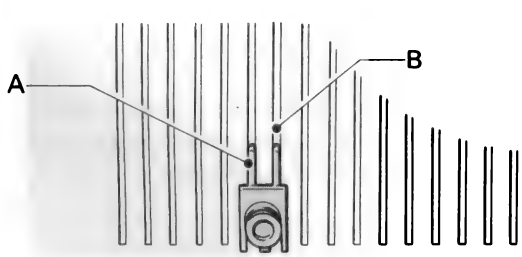
Take two Edge Pins.



Set the Edge Pins so that the knobs are between last two working needles at both edges of the knitting as illustrated opposite.

A — needles knit lace in B position.
B — 2 needles knit stockinet.

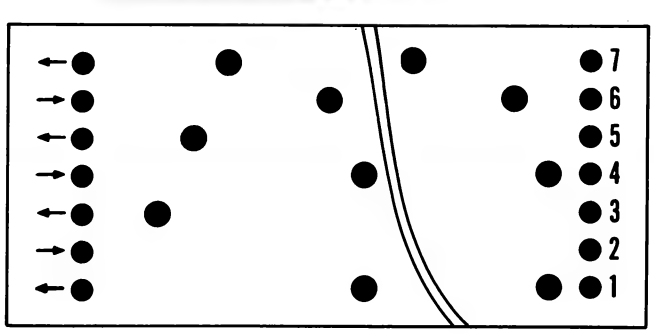
When increasing or decreasing, move the Edge Pin to follow increased or decreased needles.



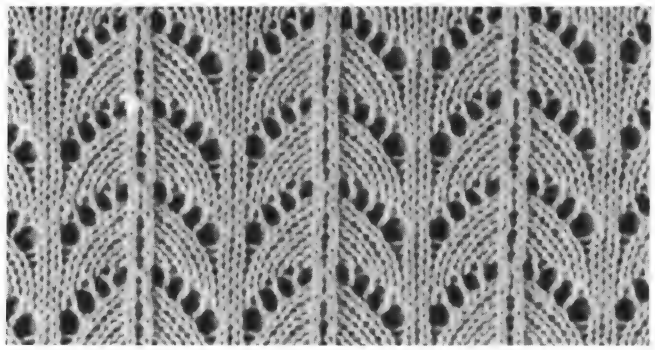
Ensure that the two studs "A" of the Edge Pin fit correctly into the needle grooves "B", at the front of the Needle Bed.

Set the controls as required in ORDER ❷.

Knit the required number of rows.



Move the Carriage in the direction shown by arrow marks on the left side of the Punch Card.



To transfer stitches several times in each row or to transfer stitches in both directions in one row, move the Carriage to knit and transfer alternately.

The sample is knitted with Punch Card No. L-10-A.

❶	1	●	S	●	∧	●	*	⟶
❷	1 ~ 2	▼	〃	▼	〃	▼	*	⇄) 2
	3 ~ 10	〃	〃	〃	⩓	〃		⇄) 8
❸	11~12	〃	〃	〃	∧	〃	*	⇄) 2
	13~18	〃	〃	〃	⩓	〃		⇄) 6
❹	19~20	〃	〃	〃	∧	〃	*	⇄) 2
	21~24	〃	〃	〃	⩓	〃		⇄) 4
❺	25~26	〃	〃	〃	∧	〃	*	⇄) 2
	27~28	〃	〃	〃	⩓	〃		⇄) 2

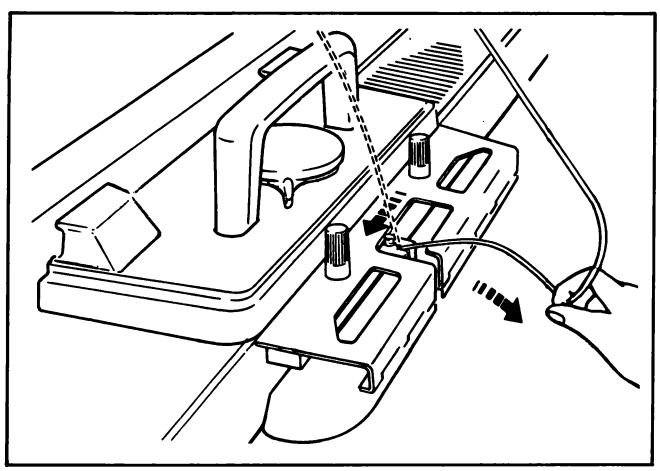
Use Wide Claw Weights and the Claw Weights.

Set the controls as required in ORDER ❶.

Knit 1 row from left to right.

Set the Edge Pin with their knobs between last two working needles at both edges of the knitting (see page 62).

When increasing or decreasing, move the Edge Pin to follow increased or decreased needles.



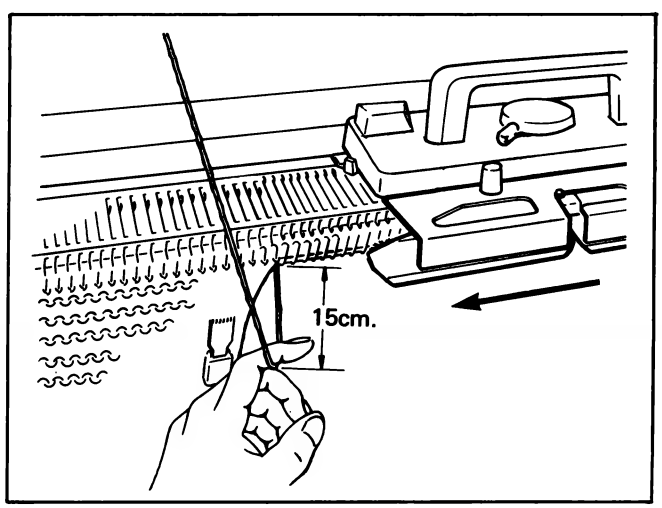
Set the Controls as required in ORDER ❷.

Knit 2 rows finishing with the Carriage at the right side.

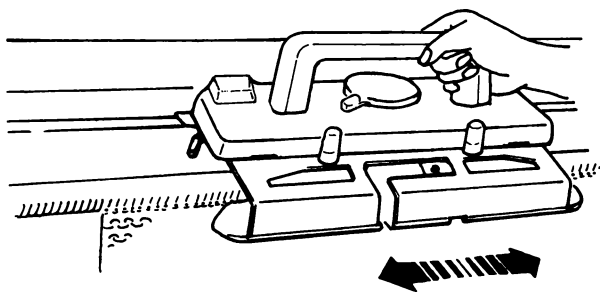
Cam Lever..... ⩓

Remove the yarn from the Yarn Feeder by pulling it towards you.

The yarn will be released from Guide Pin.

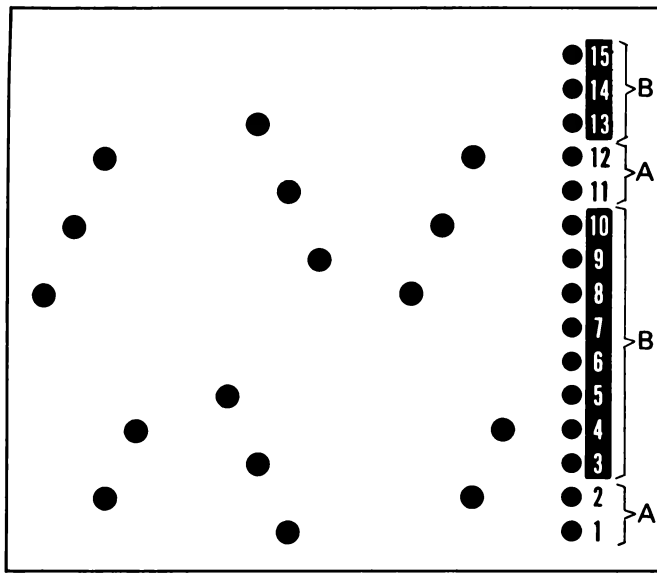


With the left forefinger, pull the yarn down approximately 15cm. from the Needle Bed and slightly towards you leaving a space so that the Carriage does not catch the yarn.



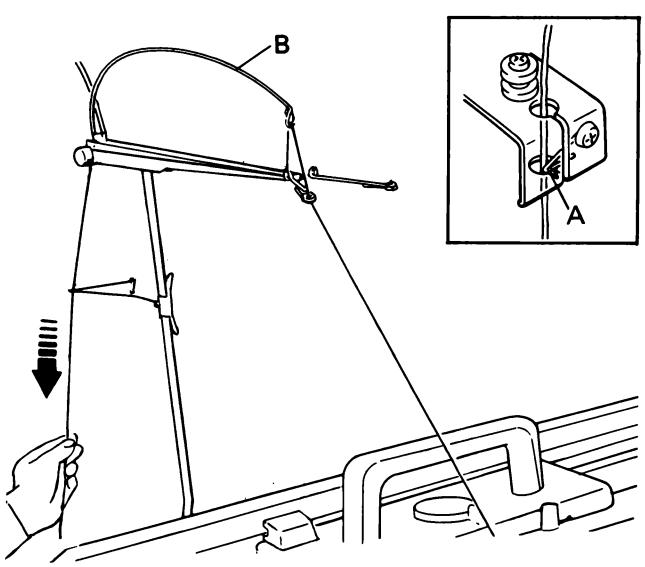
Move the Carriage 8 times over the marked Card Memory Numbers 3 — 10, finishing with the Carriage at the right side of the Needle Bed.

During this, the Carriage does not knit but transfers stitches to their adjacent needles.



Reading Card Memory Numbers

A — Yarn is in the Yarn Feeder and Cam Lever is at Λ.
B — Yarn is out of the Yarn Feeder and Cam Lever is at ⩓.



Replace the yarn in the Yarn Feeder.

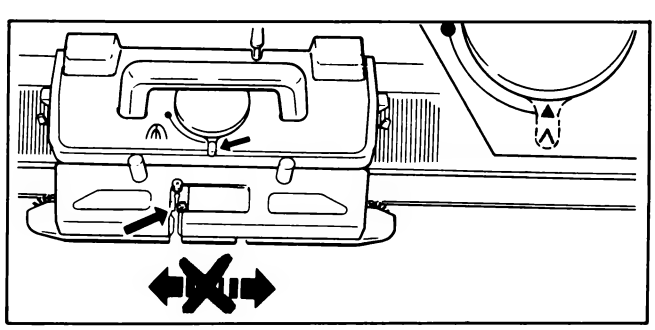
Yarn must be behind the Guide Pin "A".

Eliminate slack yarn by pulling the yarn down at the back of the Yarn Rod until tension spring "B" is almost horizontal.

Set the Cam Lever to Λ as required in ORDER ❸.

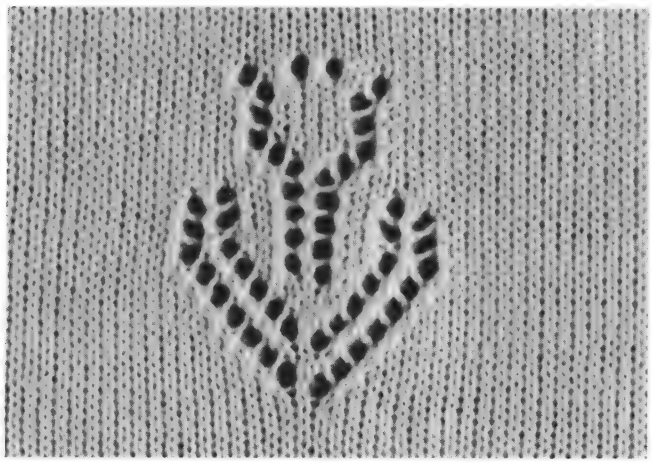
Knit 2 rows over the Card Memory Numbers 11 — 12.

From the card Memory Number 13, knit the required number of rows following the instructions for READING CARD MEMORY NUMBERS.



Do not move the Carriage while the Cam Lever is at Λ without yarn into Yarn Feeder, or the fabric will drop from the machine.

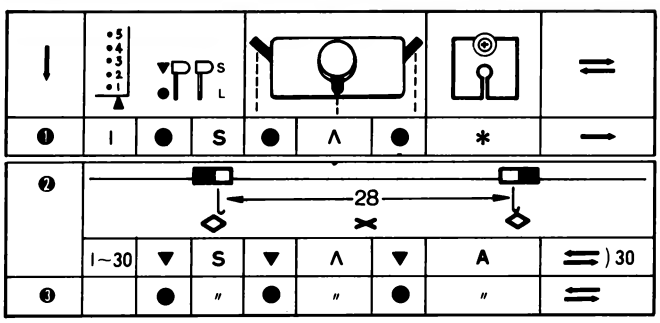
SINGLE MOTIF



Make a pattern where you like on the fabric.

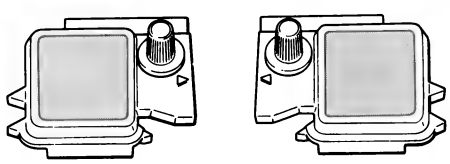
The sample is knitted with Punch Card No. L-8-A.

Use the Wide Claw Weights and Claw Weights.

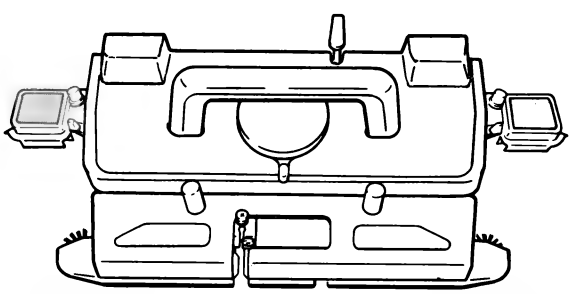


Set the controls as required in ORDER ❶.

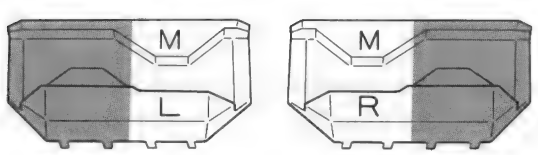
Knit 1 row from left to right.



Prepare the left and right Magic Cams.



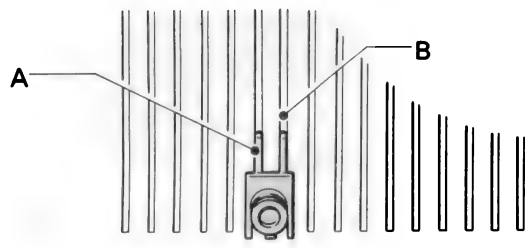
Attach the Magic Cams to the Carriage referring to the instructions for Single Motif for Main Carriage on page 25.



Prepare the left and right Point Cam M.

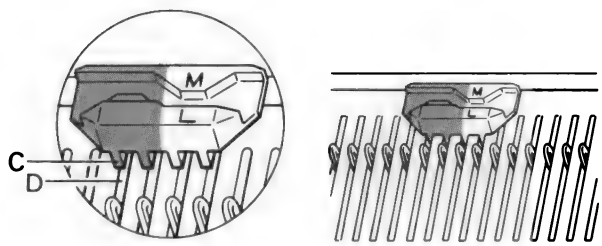
left Point Cam — marked M, L
right Point Cam — marked M, R

Prepare two Edge Pins.



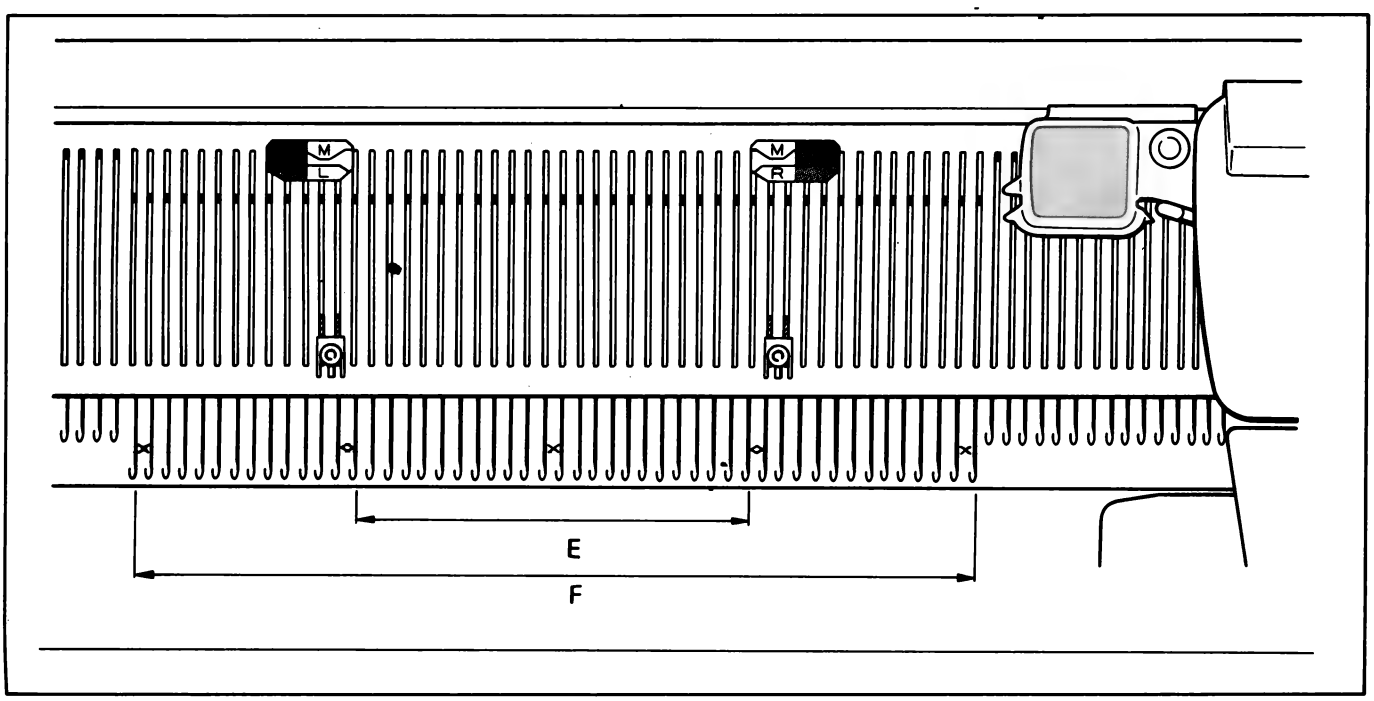
Set the Edge Pins so that the knobs are between the first and second needles adjacent to the last needles knitting single motif lace. (In this case the 13th and 14th needles)

Ensure that the two studs "A" of the Edge Pin fit correctly into the needle grooves "B", at the front of the Needle Bed.



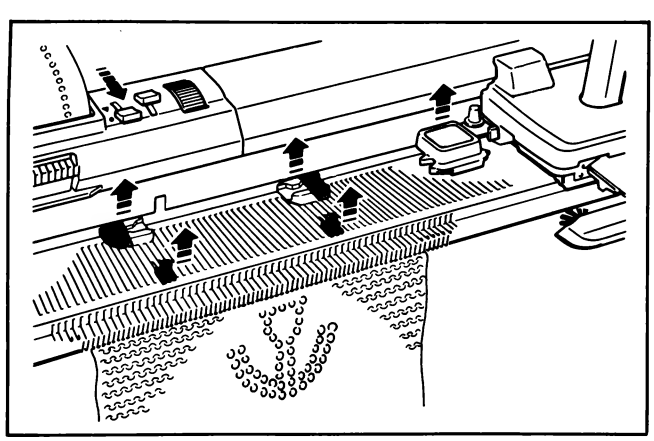
Set the left and right Point Cams M with their division lines between the second and third needles adjacent to the last needles working single motif. (In this case, the 14th and 15th needles

Make sure that the four studs "C" of the Point Cam M fit correctly into the needle grooves "D", at the back of the Needle Bed.



Edge Pins and Point Cams must be positioned as shown in the diagram above.

E — range of Single Motif
F — width of the fabric.



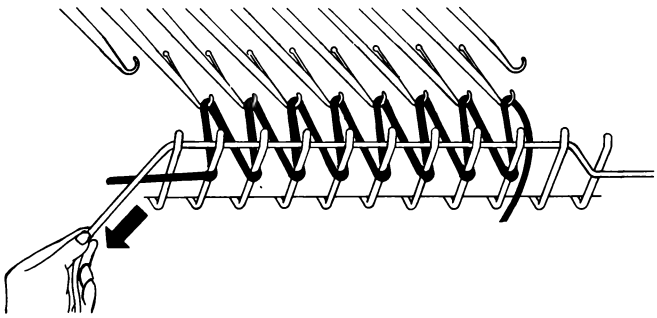
Set the controls as required in ORDER ❷.

Knit 30 rows in single motif.

After the single motif has been finished, remove the Magic Cams, Point Cams M and Edge Pins.

Both Side Levers.....●
Stop Knob.....●

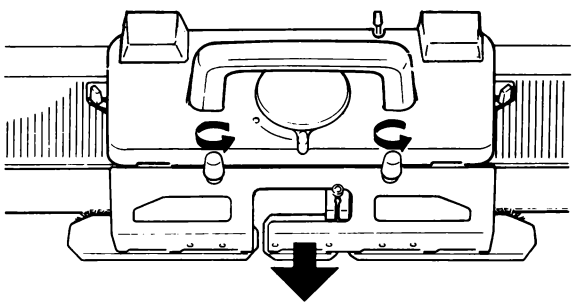
Continue knitting in Stockinet.



If cast-on row has not knitted...

Ensure that the Stitch Dial is set to approximately 6 for the first row. This setting makes large loops between sinker posts and needle hooks, and thus you are able to pull out the Ravel Cord easily. Pull the Ravel Cord firmly before you move the Carriage.

Pull out the Ravel Cord after knitting 6 — 7 rows.

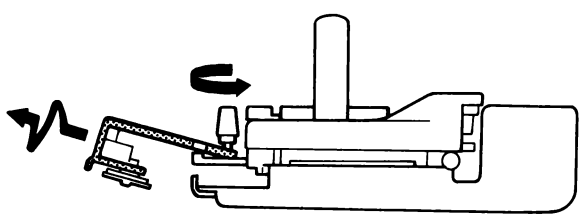


If the Carriage has jammed...

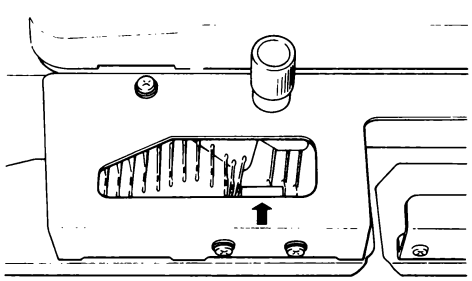
In the middle of row, do not force the Carriage. Proceed as follows: —

In pattern knitting, set the Stop Knob to ● and remove the Magic Cams if they are in use, before moving the Carriage.

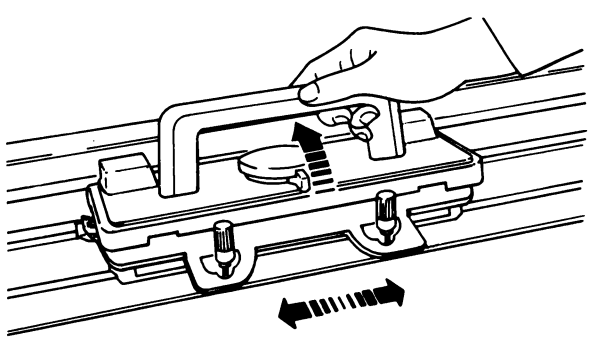
1. Remove yarn from the Yarn Feeder.



2. Loosen the Arm Nuts and remove the Arm.

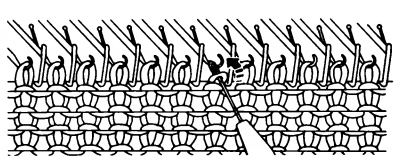


If needle hooks are jammed inside of the Arm, remove them carefully using the Transfer Tool.

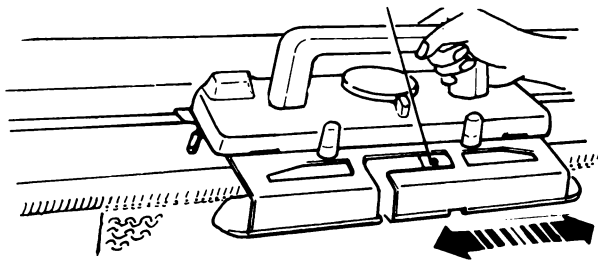


3. Cam Lever.....
   Both Side Levers.....●

4. With the Carriage Handle raised, move the Carriage in the same direction until it has passed the knitting needles.



5. If stitches have slipped behind the latches of needles, use the Transfer Tool to replace these stitches in the needle hooks. Unravel the knitted stitches (see page 68) and align the needles in B position.

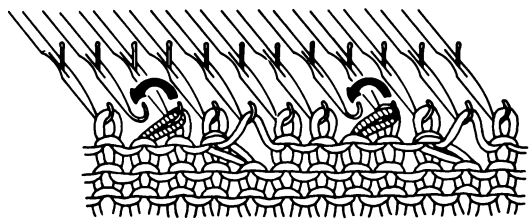


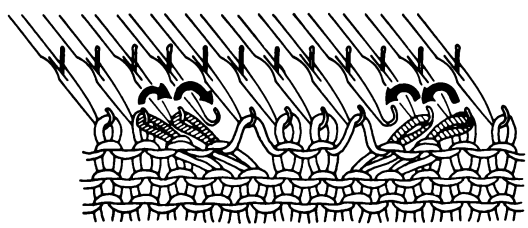
6. Replace the Carriage at the same side as the yarn without knitting.

   If the Punch Card is in use, memorize the pattern with the Carriage, with the Stop Knob at ●. (see pages 68~ 69)

7. Reset the Carriage, and replace the Arm.
   Cam Lever..... original position
   Side Levers..... original position
   Stop Knob..... ▼
   Replace Magic Cams if in use

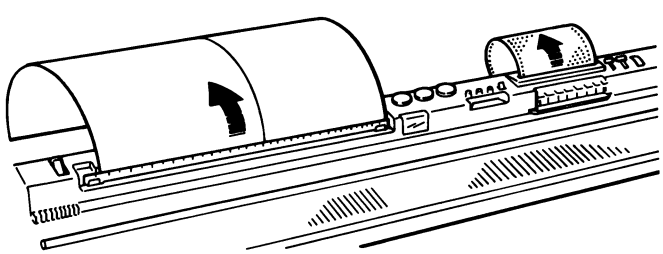
8. Replace the yarn in Feeder and continue knitting.





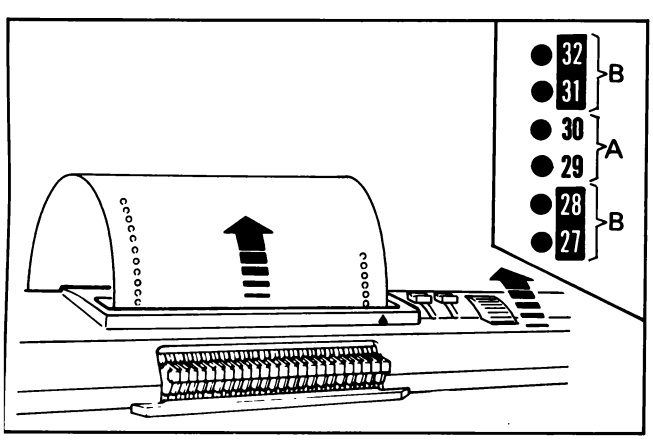
To unravel the knitting

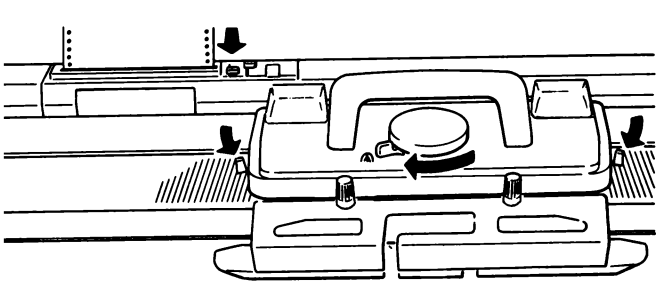
Unravel the stitches knitted in Stockinet referring to the instructions for main Carriage, and place the transferred stitches back to their original needles before unravelling the row.



If using a PUNCH CARD, wind back the Card and memorize the pattern with the Carriage, with the Stop Knob set at ●. (see page 68 ~ 69)

If using the KNIT CONTOUR, wind back the Pattern Paper before knitting. (see Knitting Manual)





To memorize the pattern

Memorizing the pattern is required when:

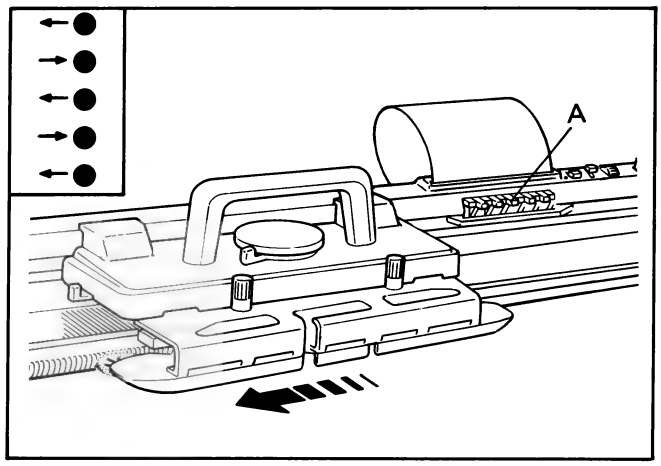
1. Carriage has been removed from the Needle Bed.
2. Knitting has been unravelled.
3. Yarn is entangled in Memory Drums.

After unravelling, turn back the Punch Card and Row Counter by the same number of rows unravelled.

When the Punch Card for Fashion Lace (L-9 and L-10) is in use, return the Card by the same number unravelled, counting only the Card Memory Numbers "A" skipping the marked Card Memory Numbers "B".
"B" sections are not knitted rows, but rows for transferring stitches.

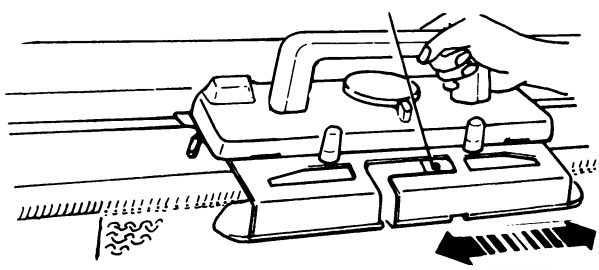
Stop Knob..... ●
Cam Lever..... ⋔
Side Levers..... ●

Remove yarn from the Yarn Feeder.



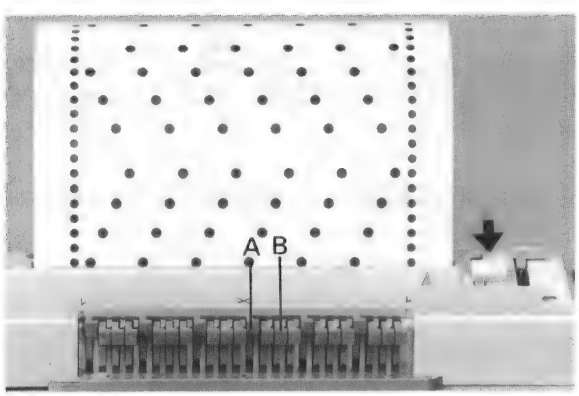
Move the Carriage once or twice across the Needle Bed until it has passed the 24 needles in front of the Touch Levers "A" and finish at the yarn side of the knitting

Make sure that the arrow mark on the Punch Card corresponds with the Carriage direction.



Insert yarn into the Yarn Feeder and set the Controls to their original position.

Continue to knit.

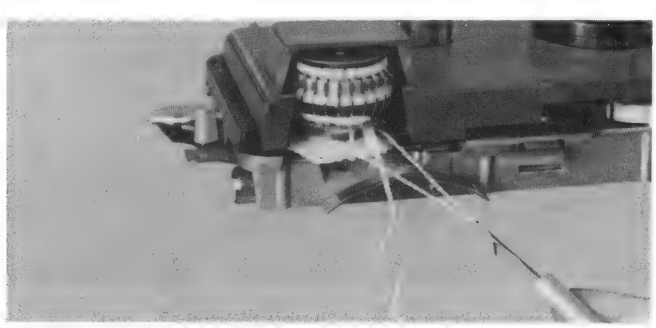


To check the pattern with the Card

By setting the Stop Knob to ●, the pattern of the row is indicated by Touch Levers.

Touch Levers at the back position "A" show the punched area of the pattern card.

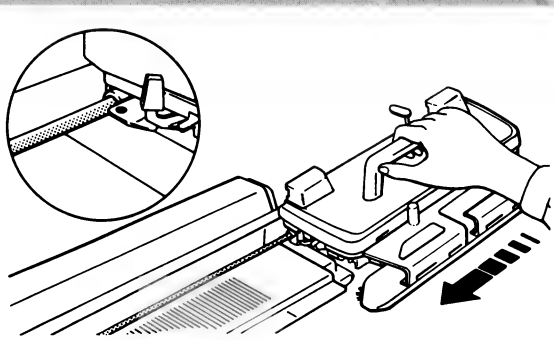
Touch Levers at the front position "B" show the non-punched area of the pattern.



If yarn is entangled in Memory Drums...

If yarn becomes entangled inside the Memory Drums, move the Carriage to the side of the Needle Bed and carefully remove the yarn using the Tappet Tool.

If this happens during pattern knitting, memorize the pattern. (see pages 68 ~ 69)



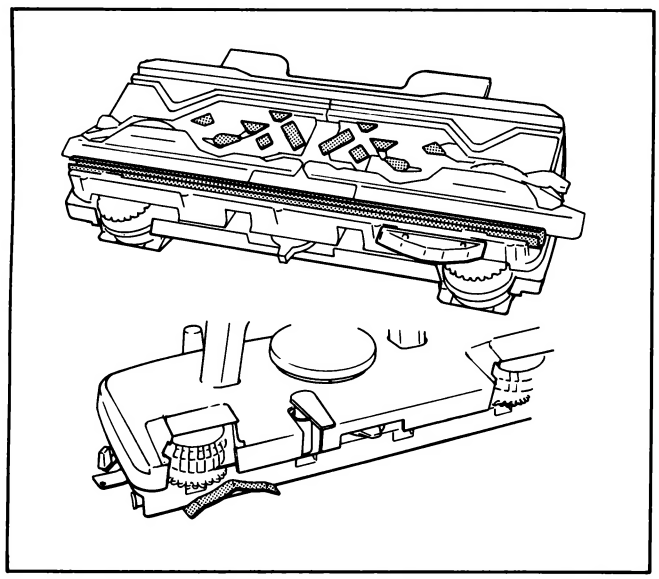
If the Carriage has been removed from the Needle Bed...

Replace it on the Needle Bed by sliding the Carriage pipe onto the rail.

Make sure that the Carriage moves smoothly on the Needle Bed.

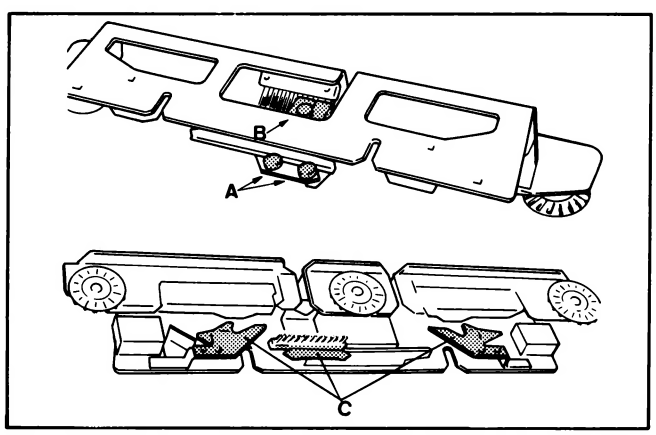
If the Punch Card is in use, memorize the pattern. (see pages 68 ~ 69)

MAINTENANCE



CARRIAGE

Turn over the Carriage and brush off all fluff, and oil the metal parts, slider and Carriage pipe.

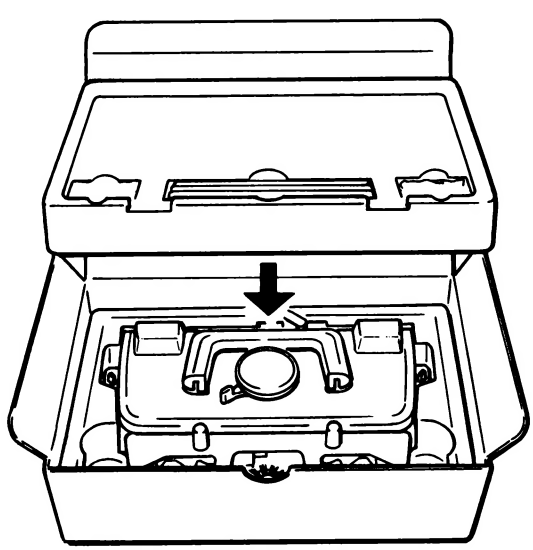


Arm

Remove any fluff that may be around the rollers "A" and Yarn Feeder "B". Oil the metal parts at the back of the Arm.

The metal parts "C" of the Lace Carriage Arm must be handled very carefully.

REPACKING



Attach the Arm to the Carriage.

Lay the Carriage Handle down.

Replace the Carriage into the styrofoam packing.

Replace the Accessories into the upper styrofoarm packing and place over the Carriage.

MEMO

Printed in Japan 1985.6. 訂1